A Clinical Lecture
ON
THE EARLY DIAGNOSIS OF TUMOURS OF THE BLADDER.

Delivered at St. Bartholomew's Hospital on March 16th, 1904.

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GENTLEMEN,—I propose to speak to you to-day about the early diagnosis of tumours of the bladder and then if I have time I will proceed to their treatment. I have chosen this subject owing to the fact that tumours of the bladder are usually overlooked until they have got beyond the stage at which they are capable of being cured by surgery. This is very sad, because these tumours of the bladder, or the majority of them, when diagnosed early and accurately, are well fitted for surgical treatment. Tumours of the bladder, for our purpose, consist, first of all, of malignant tumours, of which this is one before you, and of innocent tumours, of which this is one. The malignant tumours of the bladder are comparable to the epitheliomata of the tongue which we discussed last week. You will remember the course which epithelioma pursued; first of all a growth, next degeneration and ulceration of that growth, and next bleeding, and next sepsis, and next infection of the neighbouring lymphatic glands, and ultimately of other organs of the body. In the bladder all these occur and with differences. For instance, there is a growth a little different from epitheliomatous growth of the tongue, because it projects so much more into the bladder. And as I suppose the person does not eat with his bladder, or talk with his bladder, or use false teeth in it so the growth has a better chance. Next, besides projecting more into the bladder and besides having a pedicle, as many of them have—and I shall have something to say about the stalk presently—these tumours are contained in a peculiar organ. First of all they are inside the bladder. I think you can make this generalisation about growths inside a muscular organ like the bladder and it is that they do not easily get out. For instance, epithelioma of the bladder is a very long time in making its way outside the bladder. Malignant growth of the gall-bladder is a long time getting out; malignant growth of the pylorus or of the stomach will go on for a long time. Malignant growths in the rectum and in the intestine usually are very long in duration; they go on much longer than you would expect, much longer than similar growths on the surface of the body, and that is because it is difficult to get through the muscular wall. There is perhaps another reason why growths inside the bladder do not easily get out of the bladder. Has the bladder got any lymphatics? I wonder what the answer to that question is. Sappey is very firm that the inside of the bladder has got no lymphatics. It must have very few if any at all. I believe the truth to be that the mucous membrane of the bladder either possesses no lymphatics at all or very few, that the muscular wall of the bladder possesses lymphatics, not in abundance, and that the peritoneal wall of the bladder possesses the usual quantity. The organ at the base of the bladder—the prostate—is well supplied with arteries, veins, and lymphatics, so that cancer of the prostate is a serious disease—a dreadful and rather rapid disease, I believe. Now, if I make this quite clear to you I would put to you another point, which is of very great importance with regard to these growths inside the bladder. You must all believe—you cannot help believing—that if a tumour has a pedicle that therefore it is innocent. Think of an ordinary polypus of the nose, of a pedunculated fibroid of the uterus; think of an ordinary fibroma of the skin and of other pedunculated growths. Innocency is a characteristic of pedunculated growths, but it is one which in the case of the bladder you cannot rely upon. A little piece of this growth has been removed, microscopically examined, and put down in the museum catalogue, I am told, as an innocent growth. I have had a conversation with a gentleman who said how beautifully fimbriated these sections were. And I said to him that they had never had a section through the part which grew from the bladder. Without that the diagnosis is quite fallacious. The pedicle of bladder growths is a great trap: it leads you to think that malignant growths are innocent. You see it is such a nice shape, so easy to get hold of and to tie bits of elastic round, and to tie string round and to put clamps upon, and in the end the polypus has come away and the piece in the wall of the bladder has gone on growing. You have only taken away the piece which was sticking out and you have done it at great risk to the patient and have caused very much hæmorrhage and without the slightest benefit.

I would draw your attention to another thing and it is a principle in the surgery of malignant tumours—always avoid cutting the tumour; keep far away from its limits. You will all of you at some time or another attempt to remove tumours and growths. I will put on the board a diagram of a tumour of the wall of the bladder. I have made it have a sort of pedicle. Here is a vessel coming along the wall of the bladder to supply it. This vessel has thick walls. When it gets into the tumour its walls become thinner and thinner, until there is hardly a single layer of endothelium, having no muscular coat, no fibrous coat, but an endothelial lining. You can understand why, when the surgeon proceeds to tie things round that pedicle, when he proceeds to put elastic ligatures round it, or put clamps on it, he is dealing with a tissue which is rotten. There are vessels which cannot contract and which cannot retract and they pour out blood wholesale. No wonder the operation finishes with clamps on and yards of gauze in the bladder. The thinness of the blood-vessels explains a clinical characteristic which it is very important to understand. The bleeding generally takes place at the end of micturition. The reason for that is obvious enough. There is a very soft growth full of thin-walled blood-vessels. As the bladder contracts it squeezes the growth and squeezes some blood out of it. So micturition begins with clear urine but ends up with a spurt of bright blood. If the blood clots a little clot may be passed. This bleeding is not accompanied by pain in most cases. It is called spontaneous hæmorrhage into the bladder. What a beautiful word "spontaneous" is—how soothing! In the museum catalogue it says that this tumour was attended with no symptoms of importance except hæmaturia. Good gracious! If anything were more important to a human being and anything more terrifying to him it would be the occurrence of a little spontaneous hæmaturia at the end of the act of micturition. There is no pain. What I shall point out to you is that in any case of this sort steps ought to be taken to ascertain where that bleeding came from. In the early stages of the disease the steps can be taken without danger and they may end, as they are beginning to do now, in the cure of the patient.

I would now refer to the next event which happens after hæmorrhage: that ultimately the bladder and the tumour become septic. I do not know anything more serious than sepsis of the genito-urinary tract. The anterior part of the urethra, in front of the compressor urethræ, contains bacteria without doubt. But beyond the urethra and the bladder ought to be sterile and I suppose they are sterile in healthy people. These tumours usually become septic by the passage of instruments because the instrument is not passed with proper precautions. When a man takes a catheter in his hand to pass it upon another human being he ought to consider that he is performing an operation which is about equivalent in danger to amputation of the leg. The septic material put in may not make its presence apparent at first but once placed in the bladder and in the urethra it sets up a long train of dreadful events and the sepsis affects other regions of the body. I will tell you a story which may impress that upon your minds. A man had upon his body a series of abscesses in his cellular tissue. The abscesses were supposed to be tuberculous and they were opened and treated. Some of them healed but usually a little sinus was left. On his cheek he had another swelling which happened to be a dermoid cyst and was mistaken for one of these abscesses. After a year or 18 months' treatment for tubercle—he was supposed to have his lungs affected with tubercle also—his case was investigated. It was obvious that he had some form of chronic pyæmia and that he must have some source of infection in order to get the continuous formation of abscesses over a period of 18 months or two years. It was most difficult to find the source of infection but at last he was requested to pass his urine into a glass—not into one of

those mediæval pewter dishes such as are used at our hospital. The urine should always be passed into a proper clean glass beaker. It was then found that the urine was full of shreds of lymph. Inquiry showed that he had a stricture and that he had a septic genito-urinary tract. It was necessary to disinfect the bladder and urethra and to do that it was essential that the stricture should be operated upon; that was done and afterwards the bladder was washed out with nitrate of silver and the source of infection cut off. After that he never formed another abscess but became well. Sometimes the source of infection is exceedingly difficult to trace. I remember seeing a woman with arthritis and on inquiry it was found that she had septic endometritis and when that was cured she had no more attacks of arthritis. So when you see a person with so-called subacute rheumatism of the knee hunt about and you will find an infection in some part of the body. This sepsis started in the bladder may after a while—it takes months or years—pass up the ureters and infect the hilum of the kidney, and afterwards it affects the kidney itself and then you get a form of septic nephritis started. It is painful to think that it starts the sort of nephritis which is called surgical kidney in the older books. I suppose that is because it was thought that no surgeon could ever look at a patient without giving him sepsis of the genito-urinary tract and septic kidney. Here is one of the kidneys put for you to see. I will tell you something else about the sepsis in these cases which has a most dreadful effect upon the mortality from operations. Operation, when it is performed even under unfavourable conditions but on patients whose urine is acid, is attended with a small relative mortality. For instance, at this hospital—the statistics are improving—16 patients had a single tumour of the bladder removed. The condition of the urine was known in 14. It was slightly septic in two and acid in 12. You must not assume that I think that because the urine is acid therefore it does not contain any form of infection. You are aware that acid urine very often contains the colon bacillus, but not a very virulent form of sepsis, one which does not affect the mortality in a high degree. Of the 12 with acid urine three died—that is to say, a quarter of them. The two with slightly septic urine recovered. Of those who died with acid urine one died from hæmorrhage, another from shock, and another from pyæmia. So the probabilities are that only one of the people with acid urine died from a septic disease. If we take the people who were operated upon and had septic urine there were ten operated upon and five died, one of them from septic peritonitis, one from septic cystitis, and another from cellulitis due to extravasation of septic urine; two were not examined after death. Thus the mortality had risen to 50 per cent. That is a very dreadful proportion. There is another reason why you should not delay in these cases. If you delay the case is sure to become septic and the mortality is, owing to that fact, sure to be enormously increased. There is another reason why you should not delay. It is that after a while the tumour grows to such an extent that at last it becomes an inoperable case. Here is a tumour of the bladder which may or may not have been operable, but I doubt if it could have been removed without some part of the ureters and perhaps going beyond the wall of the bladder. But on looking at it closer I see that it has already got outside the wall of the bladder, which makes it inoperable.

I have spoken so far about malignant tumours of the bladder. There is another class of tumour of the bladder which you may see here, in which the whole bladder becomes full of shaggy growth. It occurs in younger people than those who have malignant disease—that is to say, in men and women below middle age. These patients suffer very little pain, they have constant hæmorrhage, they do not suffer at first very much in general health, and the disease goes on for a very long time. That is a horrid disease. I have seen a man operated upon for that disease for the ninth time. I cannot imagine what will cure that particular kind of disease. The only operation which I should imagine would cure it would be to remove the whole mucous membrane of the bladder, which is not a particularly feasible form of operation, and it probably has not been done in this country. The whole bladder has been removed both in this country and abroad at various times. I think that there is some application which might be made to those tumours. I have reason to know something about one of these cases which was treated with a strong solution of perchloride of iron and which had a very long interval of repose, the bleeding ceasing for some years. I have told you about the diagnosis resting on first the pain and then the spontaneous quiet hæmorrhage at the end of micturition, and I shall now tell you something else about the hæmorrhage. It is a thing which may mislead you very much unless it is perfectly clear in your minds—and it is that the hæmorrhage is most irregular. A person will bleed and then have a latent period of perhaps a year or 18 months and then bleed again and then have another interval. But the intervals become shorter and shorter until at last the patient bleeds with every act of micturition. And by that time the case is probably hopeless. In truth, these tumours of the bladder behave in a most extraordinary manner. I remember once looking into a bladder with the endoscope and seeing a flat epithelioma of about the size of a florin near the neck of the bladder. For some reason the man was not operated upon, but he was afterwards explored by Mr. H. T. Butlin, who saw the growth with the naked eye and felt its hard base—and epitheliomata have a hard base. Nothing could be done; it could not be removed because it was beyond removal at that stage, and he went home. I remember seeing his medical attendant who was a patient of mine. He said, "You made a nice mistake about that tumour of the bladder." I said, "Why do you say that?" He answered, "Because the man is perfectly well; he is walking about and has returned to his duties as a police constable. You are all wrong about it. Besides, when I wrote and told Mr. Butlin he said he had made a mistake." Probably Mr. Butlin did not recall all the circumstances. I said, "I cannot tell you what other people may think, but that man has got epithelioma of the bladder, and in a little while the man will have a horrible hæmorrhage and die from it." He went on with his duty for two or three months, apparently perfectly well, thinking he was cured. Then he had a violent hæmorrhage and died. So you must have clearly in your mind that the cessation of hæmorrhage in a case of tumour of the bladder means precious little.

Another thing which may be talked of as a matter of diagnosis is the passage of pieces of growth. They are very fallacious. I have seen a bladder opened twice to find a growth which did not exist, although those pieces of tumour had been seen by skilled pathologists under the microscope. The bladder was opened by two different surgeons. One surgeon opened it, having seen the villous growths, and another was so sure there were villous growths and that the other surgeon had overlooked them that he opened the bladder again but could find none. Of course the bits may have passed down the ureter from the hilum of the kidney. So I attach importance to seeing villous growths but not much. Remember, it does not tell very much about the actual character of the growth; the stalk and not the villi determine that. I remarked last time that epitheliomata of the tongue were exceedingly painful. That does not by any means apply to the bladder. It is true that an analysis of the clinical notes of this hospital show that pain is present in three-fourths of the cases in some part of the body; the remaining fourth seem to be free from pain. So it is not a diagnostic sign which will afford you very much assistance.

I shall now come to another point which may assist you. It must be clear to your minds that, given a tumour of the bladder, its clinical characters of necessity are doubtful. The greater includes the less if you assume that all tumours of the bladder are malignant. The statistics of this hospital show that the proportion of malignant to innocent tumours is 4 to 1. Albarran, who microscoped, I think, 84 tumours of the bladder and did them very thoroughly, made out a proportion of five malignant to one innocent, so that the proportion is exceedingly high. It is far safer to assume that a given tumour of the bladder is or will become malignant than to assume that it is innocent. Supposing we make up our minds that a person has a tumour of the bladder, there are certain things which will lead you to suppose that it is not operable. I need hardly now go over them all because they pertain to malignant disease in any part of the body. But one thing which makes you very chary of performing the operation is the presence of sepsis, because you make a determined effort before, at, and after the operation to disinfect the bladder. But another thing which would lead you to suppose that a case was inoperable would be that you could feel the growth. I believe that is a very significant sign. If, for instance, a patient is known to have tumour of the bladder and you can feel it above the pubes or per rectum or per vaginam I think it is an inoperable case. I might operate on such a case if I were pressed but I think it is better not to operate upon those cases. I

shall come directly to the question of diagnosis of these cases, but there is another thing which surely renders the case inoperable, and that is if you cannot by means of the endoscope see the whole extent of the growth. If by means of that instrument you cannot accurately discover its limits the probabilities are that it is not a case to which you can do any good by operation. Of course, if you felt the growth outside the bladder and that it was fixed obviously nothing could be done.

Now, as regards the actual diagnosis of these cases the diagnosis of a tumour of the bladder in its early stages is one of the simplest and easiest feats in surgery. You may have seen the endoscope frequently used and therefore I need not dwell long upon it. But there are one or two things which should make you careful as to what you promise a person from an endoscopic examination. I think an anæsthetic is necessary. I am aware that surgeons use the endoscope without an anæsthetic but for a variety of reasons I think it is far better to give the patient an anæsthetic; the parts are quiet and you can conduct the observation in a leisurely and thorough manner. Supposing you have a patient anæsthetised the next matter is the extreme importance of not introducing sepsis at the time of examination. We are in the habit now of preparing the field of operation exactly as we should for any other operation on the genito-urinary tract; the pubes is shaved, washing is done, and all the organs of generation are thoroughly disinfected, and the surgeon's hands also. One endeavours, as far as possible, to do an aseptic operation. I think I have made it clear to you how extremely important asepsis is in these cases. Having got the field of operation clear and an endoscope ready you have to prepare the bladder for its introduction, and that is a most troublesome proceeding. One of the great enemies is the presence of blood or pus. Pus you can wash out but blood is more difficult because it re-forms quickly. We have tried all sorts of things. One of the great ways to prevent hæmorrhage is to keep the patient quiet before the examination, to take care that there is no rough handling or shaking about at the time of examination, and, in the next place, to pass all your instruments with infinite gentleness and care. But supposing the bleeding continued, we have sometimes found that we could stop it and get the bladder sufficiently clear of blood for a time by injecting a 1 per cent. solution of hamamelis. It is necessary to get the clear solution. The other day we managed to see into a very difficult bladder indeed by putting into it some solution of adrenalin. That had a very marked effect upon the hæmorrhage and for a time we clearly saw a villous tumour of the bladder, but we never saw its extent. I thought it fair and right to give the man the chance of operation. I thought I should not infect him or make him very much worse and so his bladder was operated upon; but I could not undertake to relieve him altogether and to remove all his papilloma and he is in Kenton Ward now with, it is to be feared, a considerable quantity of papilloma still in his bladder. I am cudgelling my brains for some way of improving that man and getting rid of his papilloma, whether by perchloride of iron or by the cautery or by amputation I do not yet know. I have made up my mind to try again.[1]

Supposing a papilloma has been correctly seen and its position ascertained I think you should proceed forthwith to perform the operation. The operation ought to have this essential feature: you should see what you are doing. You may think that that is a very small point, but if you look into the literature of this you will find people have often performed this operation and not seen what they were doing. One surgeon performed it through the perineal route. Not only was his mortality high but the tumours went on growing just the same as before. At this hospital a number of times a tumour has been removed through the female urethra. A nice little papilloma with a beautiful stalk is seen in the bladder and then something is poked up the urethra and it is pulled off. Of course, this leaves its growing base. So you can understand that removal of these pieces through the female urethra has not done the patients very much good. I am speaking from memory but I think five out of six were known to have returned. So the matter of seeing what one is doing is a very important one in this respect and it is not a matter which only affects epithelioma of the bladder; it is a principle in surgery that you should see what you are doing and there are very few cases in which that does not hold good. Sometimes in the abdomen when there is a moveable organ like the vermiform appendix the surgeon feels the appendix and withdraws it through the wound and it is removed. That part is seen but the other parts are not. But the moment any question arises the wound should be enlarged and the rest of the operation carried out guided by the most clear vision. There is another point about the removal of these tumours of the bladder. Of course, if you see what you are doing you must do the operation above the pubes. Another point which is important about them is, I do not think you will succeed unless you use an electrical head lamp. This requires a little practice for its use, but I think it is absolutely essential for the purpose of these operations. When the bladder is freely opened it is useful to see what sort of tumour you have got by putting in a speculum. It is a convenient thing to put in. The bladder is dried with sponges and you then see the limits of the growth. One of the difficulties about operating on the bladder is the retraction of the edges of the wound, which is the next step after removal of the speculum. I think proper retraction is best done with silk through the whole of the bladder and abdominal wall. An assistant uses the silk as a retractor and it also prevents the operator pushing the bladder back into the pelvis and opening up the cellular tissue more than is needful. Supposing you have made up your mind you will remove the tumour, you may have already guessed that I have a strong impression as to the manner in which it should be removed. It should be removed like any other malignant tumour, say such as one of the mammary gland, with a wide margin of sound healthy tissue round it. Fortunately, this is not difficult in the case of the bladder, because when you come to think about the bladder you will remember that except at the trigone the mucous membrane of it is exceedingly loose. Again, let me remind you that the mucous lining of all the distensible organs is very loose, such as the stomach, the gall-bladder, and the intestines, and so it is not difficult to take hold of that mucous membrane and draw out a piece of it towards the wound. You know how these tumours bleed and I think they do so because the surgeon meddles with the malignant growth. If he will be very careful he will find that he can get on with his operation and have very little bleeding. A piece of catgut is threaded through the wall of the bladder at some distance—say, three-quarters of an inch—above the papilloma. That serves to pull the mucous membrane of the bladder and the papilloma towards the wound. Next, a cut is made through the healthy mucous membrane along each side of the stalk. It is best to keep suturing this cut as it is made and to keep the ends of the sutures to hold on by and steady the bladder with. Last year a very fat old man was in Pitcairn Ward. I should think he had about three inches of fat upon his abdomen. An enormous incision had to be made to get into his bladder. When the bladder was exposed and the peritoneum and fat pulled up, by enlarging the incision one could get at the papilloma, which was not very far from the base of his bladder. I looked into his bladder and I saw what I had been looking for—a vessel to feed the tumour. Catgut was put under that and the blood-supply cut off from the tumour, and everyone was surprised to see a big papilloma removed with certainly no hæmorrhage of any consequence. If you have failed to tie your vessel you will meet with vessels in the incision, but if you are far enough from the tumour you will meet with the vessels where they have got proper walls so that you can take hold of them and tie them. As your incision proceeds you can close it with catgut as you go along. Make half-an-inch incision and close it with catgut suture then make another half-inch incision and close that. Finally, you have got the pedicle of the tumour out surrounded by healthy mucous membrane.

Next with regard to what you shall do with the bladder itself. I allow the decision on that question at the end of the operation to turn upon two conditions. One is, Is there any oozing of blood proceeding; and the other is, Is there any sepsis? I should put the sepsis first in importance. If the bladder is septic you had better proceed on the ordinary rule of surgery which is that septic cavities should be drained. It is a safe rule, I think. So you close the wound in the bladder and in the abdominal wall with fishing-gut or silk sutures and you will drain it. And I would draw your attention to what, as far as I know, is the best drainage-tube to use. This is a Guyon's drainage-tube and it is very nicely made with a proper curve to go into the wound and into the bladder. It has a rounded eye and a notch at the base so

[1] Since explored. The papilloma was small and easily removed. The man seems quite well.

that the urine cannot be easily stopped. It is a double tube and you can wash through from one into the other. In addition, you can always get it to syphon out. It ought to syphon out anything which is contained in the bladder. You put the short stem into the bladder and the long stem over the side of the bed into some vessel and have it syphon into carbolic lotion. This particular drainage-tube has deprived the operation of very many of its terrors. Altogether it is a device of very great service.

Now let us take the other case in which you close the bladder. If you have removed the small papilloma and the wound in the bladder wall has been closed, and supposing that the bladder interior is not septic, it is safe to close the bladder forthwith. And the way one does that is as follows. A fishing-gut suture is passed through the skin, through the abdominal muscles, through the muscular layer of the bladder wall, and up through the opposite side and tied, and that brings the bladder and mucosa close together. In the absence of sepsis this succeeds exceedingly well. We have had three cases in which it has been safe to close the bladder wound immediately in that manner, and I believe I am correct in saying that each of the three patients was walking about the ward at the end of three weeks. And that is of great advantage, because if a drainage-tube is put in it will be from six weeks to two months before the patient will be able to get about properly. With regard to the subsequent history of these cases of bladder growth, when done in this particular way I believe the outlook is favourable, but as yet not many have been done freely and thoroughly. When done in the ancient way of tying bits of string or rubber round the pedicle or by clamps put round the pedicle the operation is futile, and if I had the misfortune to have an epitheliomatous tumour of the bladder I would decline to have such a proceeding performed upon me.

In conclusion, I will say this to you: everybody here ought to practise using endoscopes and all the other scopes. If a man can use the ophthalmoscope properly he will soon be able to use the endoscope and otoscope, and these instruments have been enormously improved of late. This endoscope which I show you has got a lamp which does not produce heat, it keeps quite cool, it has got an apparatus for catheterisation of the ureter, and also an arrangement for putting some additional fluid into the bladder. It is also useful if you want to distend the bladder a little more or to withdraw some of the fluid or if you want to see how much blood there is, and in fact it is a highly convenient instrument, and it is also better arranged than the ordinary run for disinfection. There is no gentleman here who could not if he chose to practise with it soon become expert in its use.

The Lumleian Lectures

ON

SOME DISORDERS OF THE SPLEEN.

Delivered before the Royal College of Physicians of London on March 17th, 22nd, and 24th,

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LECTURE III.[1]

Delivered on March 24th.

ANÆMIA PSEUDO-LEUKÆMICA INFANTUM.

MR. PRESIDENT AND GENTLEMEN,—By the above cumbersome and almost meaningless name von Jaksch described in 1890 cases of enlarged spleen in infants in which he recognised that with a certain amount of leucocytosis there was an absence of the complete picture of leukæmia or leucocythæmia. He said that there were oligocythæmia, oligochromæmia, persistent leucocytosis, enlargement of the spleen, slight swelling of the liver, and sometimes swelling of the glands. He noted the following points of difference between leukæmia and anæmia pseudo-leukæmica infantum—namely, in the former the presence of eosinophiles which were commonly absent from the blood of his infantile complaint; in the former the loss of corpuscles and of hæmoglobin was never so great as in the latter; in the former, leukæmia, the liver was much larger relatively than ever it was in the latter. In the latter (his splenic anæmia) the prognosis was much better. The following points he mentioned as distinguishing rickety enlargement of the spleen from an anæmia splenica pseudo-leukæmica—namely, in the former a lower grade of leucocytosis, a slower progress of the changes, and other conditions typical of rickets.

Some reference may be made to more recent work bearing upon this subject. Dr. Samuel West at the meeting of British Medical Association in 1900 read before the section of Diseases of Children a paper on Enlargement of the Spleen in Children and he there paid particular attention to the splenic anæmia of the infant. This subject was treated without any specific reference to von Jaksch's pseudo-leukæmic form, and he stated that the blood showed no changes but those of simple anæmia. At the same time he was expressly not referring to cases of splenic anæmia which could be classed with those of the adult—such cases he stated were extremely rare in children. He was obviously describing the cases with which we are all so familiar and have so long associated with rickets, of moderate but sometimes great enlargement of the spleen with anæmia in young infants. He pointed to the waxy ivory-like colour of the skin with a tinge of olive-green, to the large spleen, to the digestive disturbances, the appetite capricious or bad, or, on the other hand, excessive, to the occasional hæmorrhages, the enlargement of the liver in about half the cases, and the occasional occurrence of pyrexia. He noted the frequency of rickets and syphilis as accompanying or causative conditions and agreed with some other writers as to the generally favourable prognosis. His account of the blood is to the effect that the erythrocytes are reduced it may be to 40 per cent., that the hæmoglobin is reduced in the same proportion (or according to some authors in greater proportion), that nucleated red cells and myelocytes are present, that the only leucocytosis is one affecting the lymphocytes, and that this is in direct relation to pyrexia. Histologically the spleen is in a condition of hyperplasia, with slight fibrosis. Though recognising the frequent antecedence of syphilis and still more of rickets in these cases of anæmia he doubts if they are the sole cause, and they may be causative only by means of the ill-health which each produces. The relation of the spleen to the anæmia has to be determined. He thinks that the different histology of the spleen in adult and in infantile splenic anæmia shows that the spleen cannot equally cause the anæmia in both. He inclines to the view that there is a common cause for the splenomegaly and the anæmia, which he allowed might be a chemical toxin from the intestine. Dr. A. M. Gossage in the discussion mentioned a case in which there was leucocytosis to the extent of 30,000 per cubic millimetre, with increase of eosinophiles as well as lymphocytes, and the presence of a few myelocytes. It will be seen that this case at least accords with other observations on the condition of the blood.

Two years later, again at a meeting of the British Medical Association, the subject was discussed by Dr. J. S. Fowler of Edinburgh. He expressed the view that splenic pseudo-leukæmic anæmia was a special form of disease distinguished by its blood characters. There are red blood corpuscles numbering from 1,500,000 to 3,000,000 per cubic millimetre, a low colour index, the presence of normoblasts and especially megaloblasts in considerable numbers, a moderate leucocytosis of from 10,000 to 30,000 per cubic millimetre in which the lymphocytes rather than the polymorphonuclears were increased, and of the lymphocytes large hyaline and transitional forms rather than the small lymphocytes, and the presence of a small number (from 0·2 to 6 per cent.) of myelocytes. He gathers little from the histology of the spleen or liver in three fatal cases: one spleen was congested with distinct Malpighian corpuscles, another was anæmic with indistinct Malpighian corpuscles. But he says the spleen may be of very great size is always an essential factor, and commonly the anæmia is severe in proportion to the size of the spleen. He would discriminate between this and the rare case of a spleno-medullary leukæmia occurring in an infant (myelæmia). As to causation, this remains obscure, but he thinks that rickets although common is not essential and that the

[1] Lectures I. and II. were published in THE LANCET of May 28th (p. 1477) and June 4th, 1904 (p. 1554), respectively.

enlargement of the spleen probably always precedes the anæmia and is in some way responsible for it. He admits, of course, differences in degrees of severity or intensity of the various symptoms, but thinks that they are all one and the same disease and, as stated in the early part of his communication, that all these cases of simple enlargement of the spleen in young infants arising independently of any necessary antecedent disease, unless it be rickets, belong to one clinical group. On the same occasion Dr. C. H. Melland of Manchester recorded eight cases of splenic anæmia of infants. The blood counts of these cases agreed very closely with those of Dr. Fowler and the cases in general seemed to be identical in all their characteristics. Dr. Melland called attention to some differences between the blood of infants and adults and showed that some of the characteristics in these cases had a less serious significance than they would have in adults. He contended that the cases formed a definite group of splenic anæmia and that they were not merely the extreme forms of the secondary anæmia of rickets and malnutrition, as urged by Wentworth in the *Boston Medical and Surgical Journal* for October, 1901.

Some quite recent work on this subject may be within your recollection. I refer to two papers which have been read before the Royal Medical and Chirurgical Society, one in November last by Dr. Clive Riviere, and the other only last month by Dr. J. H. Drysdale and Dr. J. H. Thursfield. Dr. Riviere's account of the disease based on 13 cases differs in no material point from that which has already been noted—the large spleen, the association with rickets and syphilis, the oligocythæmia, the low colour index, the presence of normoblasts and megaloblasts, the moderate leucocytosis with prevalence of lymphocytes, and the occurrence of a small percentage of myelocytes. But his contention as to the nature of the disease is not that it is a peculiar form of anæmia in the infant but practically the only one. He says: "Is there any other form of marked anæmia recognisable in infancy? The answer I should make to that is, No, I have never seen it, have never found a description of such, and see no reason at present to believe in its existence." In his opinion cases of anæmia, spontaneously occurring, which do not present all the typical features described, are cases in an early stage of development; when they become severe they are typical. The prime factor is gastro-enteric catarrh and this is invariably due to bad feeding. In association with the gastro-enteric catarrh poisons are absorbed from the intestine, such poisons being either (1) the result of organisms, as e.g., the organism of summer diarrhœa; or (2) the by-products of disordered digestion. These poisons will wash into the blood lymphocytes from the irritated lymph glands; the poisons will reach and stimulate the bone marrow; leucocytosis takes place for a time with increase of polymorphonuclears and eosinophiles, but the leucocytosis failing, the demand can only be partially kept up by particularly formed granular cells, myelocytes, which now appear in the blood. Again, failing leucocytosis, the destruction of the red cells takes place and the characteristic oligocythæmia occurs. By a reference to von Jaksch's originally published cases and the few cases recorded as leukæmia splenica in infants he tries to show that there is no important difference between them and the cases he has investigated. I think the latter half of his task is more difficult than the former but I am not at present here concerned to consider whether or how often a true splenic or spleno-medullary leukæmia occurs in infants—obviously rarely—and Dr. Riviere thinks that even the condition of histology of the spleen may only be an extreme development of infantile splenic anæmia and that cases will be found bridging the gap, presumably both in respect of the extent of the myelæmic leucocytosis and in the histology of the spleen. His speculations on the nature of the poison, his belief that it is not one specific toxin but may be one of many, and his suggestion of a resemblance to the bacteriological conditions of pneumonia and broncho-pneumonia are extremely interesting and suggestive. Dr. Drysdale and Dr. Thursfield come to a different conclusion. They record 23 cases, of which the general conditions and the state of the blood were identical with those given by other authorities, so that there can be no doubt they are dealing with the same complaint. Their contention, however, is that it is a disease *sui generis* that is not due to rickets or to syphilis, that the differences between it and leukæmia proper are very considerable and presumably too great to be bridged over. They allude to the fact that some authors regard any other anæmia occurring in infancy as a possible early stage of this disease, and return answer that none of the ordinary causes of infantile anæmia were noted in the history of the majority of their cases. In support of their views they also give blood-counts from cases of rickets, infantile scurvy, and syphilis, which show marked differences in the various points with regard to which infantile splenic anæmia is supposed to be peculiar.

Comparing the views of these six authors we see that the main difference of opinion is as to whether von Jaksch's infantile splenic anæmia is a separate entity or not. Dr. Fowler, Dr. Melland, and Dr. Drysdale and Dr. Thursfield think it is, Dr. Riviere thinks it certainly is not, and Dr. West has at least not specified its separate existence. It is expressly or tacitly observed that the histology of the spleen affords no help on this point, though it is of importance as distinguishing the infantile form from adult splenic anæmia and from the leukæmic spleen. So far as the latter is concerned Dr. Riviere is prepared to see that distinction abolished. In regard to the former, some points in the history of a case mentioned at my last lecture are of interest. It is the boy who suffered simultaneously with his sister from splenic anæmia. The first record of his illness is when he was four years old, but it is stated that he had always been sickly and did not walk till 18 months old. From his birth he was subject every two or three months to severe attacks of diarrhœa, often with slime. Now it is conceivable that this boy was as an infant the subject of splenic anæmia of von Jaksch's type. On two or three occasions when older a leucocytosis is recorded; and most interesting of all, in 1900, two years before his death, his blood contained a small number of myelocytes, as did that of his sister about the same time.

The fact that rickets, syphilis, and an unknown factor produce forms of anæmia with splenomegaly which are so closely alike (and according to one author are identical), the fact that an adult splenic anæmia can be produced by syphilis as shown by Dr. S. Coupland's well-known case, the improvement brought about by mercurial treatment in infantile syphilis and splenomegaly as stated by Dr. A. E. Russell, the recovery of a certain proportion of the cases (whether von Jaksch's cases or not) on what may be called rational lines of treatment, suggests a resemblance between syphilis and rickets and the unknown factor as causes—in other words, supports the view that a toxin of some sort is the cause.

The pathology of rickets must be admitted to be sufficiently obscure and in the rickety cases it would still remain open to question whether the toxin producing the anæmia and splenomegaly is still the cause of the rickets or whether the defective formation of bone is a mere matter of chemical metabolism, and the toxins are independently produced and independently operating. That the early symptoms of rickets include a general constitutional disturbance, with general tenderness and sweating at night and sensation of heat or oppression, is as readily explained by the existence of a toxin as by anything we know of the relation between fat and proteid starvation on the one hand and defective bone-formation on the other.

I do not wish by these observations to let it be understood that I am accepting without reserve the identity of the infantile anæmias, as Dr. Riviere would have it. I only suggest that there may be identity in procedure—namely, by means of toxins—even though there is difference in detail, that is, in the nature of the toxin. That if, as is surmised, an intestinal toxin is the cause of von Jaksch's variety, and if the syphilitic toxin can cause anæmia of its own, still more, if it can do it by raising an intestinal toxin, then the other cases of splenomegaly and anæmia, whether rachitic or of other source, are most likely due to a similar agent. Granting that they are all anæmic, that all have enlarged spleens, that they are all in infants, on what does the distinction depend? A certain number of the rather severer cases have some differences in their blood composition, which consists of a pronounced oligocythæmia (a mere matter of degree), a variable leucocytosis—never very great, an excess of lymphocytes, and a few myelocytes. In the face of the fact that both these last conditions are common to infants—a fact made much of by Dr. Riviere but at least allowed by Dr. Melland—it seems a rather unsafe criterion upon which to found a separation. Moreover, this distinctive lymphomyelæmic condition is, as far as I can see, not associated constantly with any other difference and therefore it cannot

be regarded so far as specific. It may be only a matter of severity or duration or degree.

Dr. Gemma[2] records two cases of infantile splenic anæmia presenting the familiar characteristics both as to the blood and to the spleen. In one of these cases he isolated the bacterium coli commune from the splenic blood obtained during life. He admits, however, that if it is an infective disease more than one organism might produce it and discusses its relation to rickets, which he regards as probably infective, to intestinal toxins, and to syphilis.

HODGKIN'S DISEASE.

The spleen in Hodgkin's disease takes a subordinate position; it is so obviously not the starting point of the disease. It is rarely of very great size and the deposits of lymphoid tissue which form one of its characteristics are not universally present. I have brief notes of 21 cases which have occurred in the period of ten years formerly specified. I am afraid there is not much that can be gathered from this set of cases which adds anything to our knowledge. They are cases mostly of several months' duration, with rather a striking predominance of males over females—namely, 19 males to two females. The period of youth is also more productive of the disease than that of middle life or old age. Of the 19 in which the age is given seven were under 20 years of age, four were under 25 years, and only five were over 40 years of age, and the average age of the 19 cases is 30 years. The weights of the spleen of the cases examined post mortem were respectively three, five, seven, 13, 16, 22, 29, 30, and 65 ounces. Of others of which no post-mortem examination was obtained there were four in which the spleen appeared to be normal, two in which it was palpable, three others respectively two inches below the costal margin, three inches below, and reaching the umbilicus, while in one case the spleen probably reached a very large size. I say probably because the splenic nature of the abdominal tumour in this case was questioned by more than one of my colleagues and no opportunity of determining the truth by post-mortem inspection occurred. But for the belief that the patient suffered from Hodgkin's disease I think there are strong grounds. After a blow on the neck some of the left cervical glands increased in size and persisted. After 12 months they were excised and at this time there was no evidence of an enlarged spleen or of any abdominal tumour. Five months later there was a large mass in the abdomen, occupying the left side, reaching down below the umbilicus and crossing the middle line.

This persisted for eight months under occasional observation. The patient had moderate oligocythæmia, no leucocytosis, but remittent pyrexia of the kind which has been seen in connexion with Hodgkin's disease. She died outside the hospital a year later than the last observation.

There are two questions with regard to lymphadenoma or Hodgkin's disease to which these cases may help in supplying the answer. One is its relation to tubercle and the other its relation to lymphatic leucocythæmia. I do not think the existence of the latter relation is generally allowed at the present time. The fact of leukæmia is regarded as shutting off a certain class of cases, and the very fact that lymphadenoma or Hodgkin's disease is called by German pathologists pseudo-leukæmia represents the conviction that the two conditions—Hodgkin's disease and lymphatic leukæmia—are different diseases. The independence of the two complaints is supported by these cases, for of the 14 in which the leucocytal condition is specified either there was no leucocytosis (five cases), or it was exceedingly slight, not more than 12 000 (four cases). or if it was sometimes noted as 30,000, 40,000, or 50,000 the polymorphonuclear leucocytes were greatly in excess of the uninuclear, and hence neither of the forms of lymphatic or splenic leukæmia was assumed. But a case, which I shall say more of later, was regarded as Hodgkin's disease on the strength of a blood count showing 6250 leucocytes, yet quickly developed lymphæmia. Dr. Wende[3] publishes a case bearing on this; lymphomatous growths appeared in the skin and the glands were enlarged, five months later the leucocyte count was normal, three months after that lymphæmia intervened, and three weeks later death occurred. This he regarded as a conversion of Hodgkin's disease into leukæmia.

The other question is of more recent origin. The clinical difficulty of distinguishing the glandular hyperplasia of lymphadenoma from that of tubercle must be admitted; the occasional occurrence of cassation of some of the glands and the coexistence even of miliary tuberculosis must also be admitted; but the view that the hyperplasia of the glands and spleen in Hodgkin's disease (apart from the familiar appearance of grey tubercle or cassation) and the peculiar growth of lymphoid nodules in the solid organs are the results of infection with the tubercle bacillus appears to assign entirely new powers to that organism. Out of the 12 cases which (with some reserve as to two cases which may have been sarcoma or lymphosarcoma) may be regarded as lymphadenomata in only two was there any appearance of tubercle. In one there were minute caseating points in some cervical glands and early cassation in some of the lymphoid tumours of the spleen. In the other two mesenteric glands out of many showed a caseating tuberculous deposit.

LEUCOCYTHÆMIA.

It is perhaps about leucocythæmia or leukæmia that more interest has been shown than in almost any disease of the spleen, doubtless because it was the first in modern times in which it appeared clear that the spleen was directly and primarily responsible for a serious and fatal disease. For though the ancients regarded the spleen as capable of causing palpitation either by enlargement pressing upon the heart or by the passage of melancholic vapours from it to the heart, and though Aretæus thought that jaundice might result from disease of the spleen (and, indeed, other organs) as well as of the liver—the jaundice then being of mixed black and green colour because it was the function of the spleen to cleanse the black blood—in more modern times the diseases of the spleen were more obviously secondary either to heart disease and cirrhosis or to the infection of malaria and some other febrile complaints. Time does not allow me to go into the history of the first discovery of leucocythæmia, almost simultaneously as it was by Professor Hughes Bennett of Edinburgh and by Professor Virchow in Germany; but there has been a considerable advance in our knowledge since that time, very largely in consequence of the deeper acquaintance with the histology and pathology of the blood, which has been possible with increased powers of the microscope and improved methods of colour-staining.

To even a greater extent than in splenic anæmia and anæmia infantum is the condition of the spleen associated with that of the blood, and the division is now universally recognised into a lymphatic leukæmia or lymphæmia and a spleno-medullary leukæmia or myelæmia. In the former the leucocytal increase is characterised by the extraordinary predominance of lymphocytes, which may be 90 to 95 per cent. of the whole number of leucocytes; in the latter the polymorphonuclear leucocytes and the form of cell known as myelocytes correspond to between 80 and 90 per cent. of the whole, themselves in about equal proportions. The spleen is, as a rule, enlarged in both of these forms, but the amount of enlargement is strikingly different. In the spleno-medullary form, as is well known, the spleen reaches often a greater size than it does in any other disease, whereas in lymphæmia or lymphatic leukæmia the organ is relatively but little involved or undergoes only a slight enlargement. I find in the records of Guy's Hospital over the period already specified (Post-mortem Examinations 1892–1901, Clinical Reports 1897–1901) 29 cases which have been regarded as possibly cases of the kind. Of these, 16 are unequivocally spleno-medullary leukæmia, four are cases of lymphæmia, one appears to be a mixed form, and eight are doubtful. Of these, one was probably splenic anæmia, another pernicious anæmia, two others were extensively tuberculous, though in one of these the spleen weighed 49 ounces. In the last four cases the history and details of the blood examination are insufficient and one of these patients was alive five years later. Time, again, does not allow nor would it serve, I think, much useful purpose to give details or even brief notes of all these. In respect of the cases of spleno-medullary leukæmia there is little in them that differs from what has been long known with regard to this form of disease. In the later cases the diagnosis has always been confirmed by the blood counts showing the presence of myelocytes in the usual proportions.

The striking feature of this form of disease is the great size of the spleen. I have arranged here on the screen the diagrammatic representations of the spleens (and livers) in the 16 cases of the spleno-medullary form, and the weights in ounces in those cases of which a post-mortem examination

[2] La Clinica Medica Italiana, 1901, p. 212.
[3] American Journal of the Medical Sciences, December, 1901.

was made are given. These ten spleens vary in weight between 48 ounces and 128 ounces (from 3 pounds to 8 pounds) with an average of 91 ounces. The actual weights are in ounces: 128, 128, 112, 110, 104, 84, 77, 61, 57, and 48.

Another remarkable fact which must have some connexion with the pathogeny of the disease is that the disease is so rarely seen in its early stages; the spleen is rarely seen to grow to the great size it attains, but already when the disease is discovered the spleen is of great size, or the illness is revealed only because the spleen is painful or causes dragging pain in the side and not because of any general malaise or anæmia. If, as seems less likely and is indeed now generally discredited, the splenic changes are the cause of the disorder, then a long time passes before the disturbance of its functions is felt in the body generally. If, as is now widely believed, the spleen is only secondarily enlarged and the disorder is in the blood formation in the bone marrow, then even the body is remarkably tolerant of such a profound alteration in the circulating blood. On this view the excess of leucocytes and the occurrence of myelocytes are due to abnormal formation in the bone marrow, and the spleen is regarded as being simply distended and enlarged in consequence of the accumulation of these white cells in the pulp of the organ. Such fibrosis as may be present can easily be explained as the results of chronic irritation in the course of this procedure. But this view is not universally held. The spleen is still held by some to be a hæmatopoietic as well as a hæmolytic organ and the various phenomena of the development and diseases of the blood are explained by M. Marcel Labbé[4] by the assumption that all the hæmatopoietic organs—the spleen, glands, liver, and bone marrow—contain in early life both lymphoid tissue and myeloid tissue; that in adult life the bone marrow contains only myeloid tissue with remains of lymphoid tissue and that the glands and spleen have then chiefly lymphoid tissue with remains of myeloid tissue. Under conditions of disease the remains or potential tissues in each organ may develop or become actual. Thus the myeloid tissue of the spleen may develop so as to suppress or supplant the lymphoid elements and the lymphoid elements in the bone marrow may grow so as to suppress or supplant the myeloid tissue.

Turning now to the cases of lymphæmia, which are apparently less common than those of myelæmia, it is clear that as a rule the spleen is of less size. Of six cases from the Guy's Hospital records in two the spleen weighed only 18½ ounces after death, in another the edge of the spleen appears to have been two inches above the umbilicus, in another it was just palpable, in another the spleen was never with certainty palpable, but in the last it was very large indeed, reaching from the sixth rib nearly to the iliac crest, with its anterior edge only one inch from the middle line. In a case which I communicated to the Clinical Society of London last year, although the leucocythæmia or lymphæmia was extreme, the spleen could only be felt just beneath the costal margin, descending nearly an inch below it on deep inspiration. In the cases of acute lymphæmia described by Dr. J. Rose Bradford and Dr. H. Batty Shaw[5] of five spleens four were seen post mortem and they were respectively normal, slightly enlarged, 20 ounces in weight in a youth aged 19 years, and four and a half ounces in weight in a boy aged seven years. In the fifth case the spleen was just felt beneath the costal margin.

It is within recent years that cases of lymphæmia have been more frequently recognised, now that blood counts, and especially differential blood counts, are more frequently made, and I think it can be shown that there is greater variety among cases of lymphæmia than among cases of myelæmia. If the formation of lymphocytes takes place in many organs, in more organs than are capable of giving rise to myelocytes, the variety is perhaps in part explained. I think the following propositions will be found to hold good of lymphæmia or lymphatic leukæmia.

1. That the spleen is as a rule much smaller than in myelæmia, indeed, reaches no great size, and may be smaller even than occurs in cirrhosis and other conditions already mentioned.

2. That the lymphatic glands may not be very large at first or even at a late stage of the illness. In the first of the two cases which I read before the Clinical Society of London, clinically it was observed that "there is no increase of the glands in the neck, axillæ, and groins; the largest in the groin measures six millimetres by four millimetres, and post mortem a considerably enlarged lymphatic gland was found beneath the right parotid; the cervical glands were slightly enlarged but no mention is made of any other lymphatic glands being enlarged." In the second case, with an extreme degree of lymphæmia, a gland of the size of a pea was felt in the right posterior triangle and in each groin one or two slightly smaller. In Dr. Bradford's cases the lymphatic enlargement was often very moderate and certainly not always in proportion to the lymphocytosis.

3. That many organs are infiltrated with lymphocytes. In a case to which I have referred this was true of the heart, liver, spleen, kidneys, suprarenals, pancreas, salivary glands, lacrymal gland, thymus, and lymphatic glands. In another case which I communicated to the Clinical Society of London I think there is no doubt that the mammæ were infiltrated as well as the parotids and other organs.

4. That the thymus is very often involved. In three of the cases above alluded to there was hyperplasia of this organ. In one of them in the position of the thymus was a hard fibrous mass, six by four by three centimetres, very dense and containing a cartilaginous nodule. In another case, that of a boy, aged ten years (the first of the two cases already referred to), there was extensive dulness over the upper end of the sternum and post mortem the thymus was found to weigh 586 grammes, or 21 ounces, and was larger than a normal kidney. It was pale yellow on section, presented a fatty semi-transparent appearance, and contained numerous small and irregularly distributed hæmorrhages. Under the microscope the organ showed large spaces packed with lymphocytes and surrounded by a fairly well-marked fibrous stroma. In the third case, that of a boy, aged 15 years, the thymus is returned as much enlarged, pale, and speckled with hæmorrhages. As the kidneys, liver, spleen, and glands were described as packed with lymphocytes, it is probable that the thymus was in the same condition.

5. The duration is probably much shorter. At any rate there are some very acute cases belonging to this form of the disease. In the cases of Dr. Bradford and Dr. Batty Shaw the duration never exceeded eight weeks. The case above referred to, in which the region of the thymus was occupied by a hard fibrous mass, lasted only a calendar month. It was the case of a youth, aged 16 years, who was admitted for progressive weakness; three weeks previously he had been giddy and weak, without pain or sickness. On admission he was pale with a slightly enlarged liver and a spleen down to the umbilicus. The red corpuscles were 1,600,000; the leucocytes were 160,000, with many lymphocytes, a few eosinophiles, and one or two myelocytes. There were recent hæmorrhages in both retinæ. The temperature varied from 102·5° to 104° and 105·4° F. He had bleeding from the gums and diarrhœa and he died a week after admission. Post mortem the cervical glands were enlarged, red, and soft; the right bronchial glands were very much enlarged. The mesenteric glands were large, red, and soft, and the glands in the portal fissure were large. There were numerous superficial hæmorrhages in the pericardium. The liver was tough, fibrous, cirrhotic-looking, weighing 53 ounces, and there was early ulcerative colitis of the whole large intestine. Though the clinical history was of only one calendar month's duration the post-mortem results suggest latent disease somewhat earlier. In another case, that with the large, pale, speckled thymus, the duration was only two months. A week before admission the patient had pain in the neck, the axilla, and the groins and next day bumps were seen. On admission the submaxillary, the submental, the cervical, the occipital, the axillary, the inguinal, and the epitrochlear glands were enlarged. The leucocytes numbered 12,500. A month later the spleen and liver were moderately enlarged. At this time the leucocytes had risen to 43,000 and 48,000, with 95 per cent. of lymphocytes and only 4·4 of polymorphonuclears. The tonsils, large at first, were getting much larger. Ten days after the last note the leucocytes were 116,000, then 126,000. The patient had hæmorrhage from the mouth which was believed to come from the tonsil and he died in two months from the first symptom. Post mortem the various lymphatic glands were enlarged, dead white in colour, with small hæmorrhages. There were petechiæ under the pleuræ and the pericardium. The liver weighed 103 ounces. The spleen was of a pale crushed-strawberry colour with several infarcts.

[4] Le Sang, Paris, 1902.

[5] Transactions of the Royal Medical and Chirurgical Society, vol. lxxxi., 1898, p. 343.

The tonsils were much enlarged with extensive sloughing on the surface. In each of the two cases I showed at the Clinical Society of London the duration was three months.

6. In these cases of lymphatic leukæmia the leucocytosis even at the time of death may be relatively slight—that is, not above 50,000, and it may come on relatively slowly—that is, the lymph-glands may be found enlarged first without leucocytosis so that a condition of Hodgkin's disease is simulated, and no doubt it is just such cases as these last which explain the belief which has been held that the diseases are the same, or that leucocytosis is an accident in the course of Hodgkin's disease. In illustration of this relatively slight leucocytosis in some cases I may quote again one of the cases already alluded to in which, after two months' illness with much enlargement of the parotid glands and the internal organs, the leucocytes amounted only to 15,000, of which more than half were lymphocytes—i.e., 46·6 per cent. small and 9·3 large, while the polymorphonuclears took a second place with 42 per cent. 18 days later the leucocytes had risen only to 50,000, but the lymphocytes were now 94 per cent. small and 3 per cent. large, thus accounting for all but 3 per cent. of the total leucocytes. Another case was that of a man, aged 61 years, who observed a swelling in the neck about Christmas, 1902. A month later there were swellings in the axilla and groin and the abdomen became distended. He came under observation in October last; the glands in the neck, axillæ, and groins were enlarged, the liver was enlarged, and the spleen just palpable. The glands in the neck were of the size of beans and those in the axillæ and groins of the size of pigeons' eggs. The white corpuscles were 6250, but no differential count was made. 17 days later the count was 91,800, with small lymphocytes 76 per cent., large lymphocytes 15 per cent., and polymorphonuclears 9 per cent. Eight leucocyte counts during the next seven weeks at about equal intervals gave figures varying from 65,000 to 111,000, but more often over 100,000 (average 97,000).

It is clear that lymphocythæmia, lymphæmia, or lymphatic leukæmia presents itself in at least three or four different forms which I have already illustrated directly or by reference. First, there are the cases called acute leukæmia, described by Fraenkel and by Dr. Bradford and Dr. Batty Shaw, in which sloughing of the gums or gingivitis is a prominent feature, in which the duration is a matter of six or eight weeks, and in which the large lymphocytes form the bulk of the leucocytes present. Secondly, there are other acute cases which may be fatal in as short a time as three months, possibly less or more, in which sloughing of the gums or gingivitis is not a feature and in which, at any rate, the lymphocyte increase may be due to the small lymphocytes. Whether these two groups are distinct or whether, as seems much more likely, they will be found to overlap or interdigitate, I am unable at present to say. In one of the cases above mentioned there was ulcerative colitis and in another sloughing of the tonsils, but no distinction was made between small or large lymphocytes in the blood counts. In neither of these two groups is an early or pronounced enlargement of accessible or even of deep-seated glands a necessary feature.

The third group may be represented by the case of the elderly man just given, in which the glandular enlargement is the prominent feature of the case and in which the duration is relatively long; for instance, this patient was alive in the thirteenth month of the complaint.

The following case seems to me to form a fourth category.

A woman, aged 29 years, was under the care of my colleague, Mr L. A. Dunn, for a swelling in the neck which was partly a growth of the thyroid body and partly a mass of enlarged cervical glands, attributed to decayed teeth. Mr. Dunn removed the thyroid growth but left the glands untouched. Nine months later she became faint in the street and was taken to the Westminster Hospital, where she says she was told that she had leukæmia. She was in ten days and then returned home; she was better for a time but again became ill, and about two months later came into Guy's Hospital under my care. She was anæmic; there were a few enlarged glands in the neck, the groins, and the axillæ, apparently from one-third of an inch to half an inch in diameter. The spleen reached to one inch from the middle line and the lower end nearly touched the iliac crest. The vertical extent was estimated at 11 inches. The liver reached five inches below the costal margin and below this was a solid lobulated mass reaching one inch lower than the umbilicus and four inches below the liver. This was thought to be either the kidney or a mass of large glands. Enlargement of the thymus was also suspected from impaired resonance over the upper sternum. The blood count was as follows: red corpuscles 900,000 and leucocytes 42,000, of which the greater number were small lymphocytes, but there were some eosinophiles and a few doubtful myelocytes. She died five days later. The cervical, bronchial, mediastinal, and mesenteric glands were enlarged. The thymus was enlarged, measuring ten by four and a half by six centimetres. The liver weighed 111 ounces and the spleen 91 ounces. This was of uniform dark maroon colour, with no pale areas, but three small triangular almost black infarcts. The kidneys were of great size, weighing together 37 ounces; they presented an extraordinary appearance of mottling with alternate patches, streaks, and blotches of maroon colour and pure white. Of the bone marrow I have no post-mortem record; but during life she appeared to be tender over the sternum and the bones of the arms, but she was perhaps too ill for these results to be quite trustworthy. In the unusual size of the spleen and the relatively long duration of the case, if the glandular enlargement of 11 months previously can be accepted as a commencement, we have a course somewhat different from that of the others. The relatively small degree of leucocytosis is also notable. It is to be regretted that a report of the histological examination is not forthcoming.

Mixed cases of leukæmia are believed to occur—that is, combined cases of spleno-medullary and lymphatic leukæmia. But they must be rare. As I have already shown, and as is well known, the spleen may be enlarged in association with lymphatic leukæmia and, as the last case shows, the spleen may be nearly as large (91 ounces) as the average (97 ounces) of spleen weights in 16 unselected spleno-medullary cases. But a mixed case should mean nowadays one of combined lymphæmia and myelæmia. There is only one case in these I have now brought before you which was regarded as a leukæmia splenica et lymphatica. But it is entirely inconclusive because the records of the blood examination are wanting and the coexistence of enlarged lymphatic glands with an enlarged spleen may occur in a pure lymphæmia.

It is, perhaps, going a long while back, but in 1873 I brought before the Pathological Society of London a case of leucocythæmia in which a huge spleen was associated with general enlargement of the glands, the growth of lymphoid deposits under the pleura, infiltration of various organs with leucocytes (including the testes), and a condition of blood in which small uninuclear leucocytes, as well as large multinuclear leucocytes, were certainly present; but what the staining methods of the present day would have revealed I am unable, of course, to say. I can, however, say this, that I have not again met with an exactly similar case, unless the last case of "splenomegalic lymphæmia" which I have just read is one. I must, of course, admit that my case of 30 years ago may have been a lymphæmia rather than a spleno-medullary or a mixed case. And certainly authors have for the most part accepted the view that lymphæmia and myelæmia are essentially different.

Were I discussing these diseases, these forms of leucocythæmia, for themselves alone, and not as I have said "some disorders of the spleen," I should have to offer my excuses as well as my regrets for the little information I have brought forward as to the condition of the bone marrow in these cases. I must be content with reminding you that the bone marrow has been found altered not only in spleno-medullary leukæmia but also in lymphatic leukæmia, and though they appear to be extremely rare cases of leukæmia without change in the glands or spleen are said to occur.

The feeling of the majority of observers is clearly that the spleen is in both forms secondarily affected, that it is stuffed with leucocytes unduly proliferated from the bone marrow in the one case and either from the lymph glands or conceivably from the bone marrow in the other.

SPLENOMEGALY WITH CHRONIC CYANOSIS AND POLYCYTHÆMIA.

I may briefly call attention to another condition in which splenic enlargement takes place—namely, chronic cyanosis with polycythæmia; that is, increase in number of the red blood corpuscles. Dr. Parkes Weber read a case of the kind before the Clinical Society of London on March 18th. Dr. Saundby and Dr. J. W. Russell[6] published a case two years

[6] THE LANCET, Feb. 22nd, 1902, p. 515.

ago, Professor Osler published four new cases in August, 1903,[7] and other cases have been recorded in America and on the continent. In Dr. Russell's case the spleen weighed 48 ounces, in Dr. Weber's 23 ounces, but in two of Professor Osler's it was not demonstrably enlarged.

The nature of these cases is so far obscure. Dr. Weber found red transformation of the marrow of the left humerus, the left femur, and the left tibia. The marrow contained numerous nucleated cells representing myelocytes, eosinophile myelocytes, erythroblasts, and large endothelial cells and giant cells, and thus appeared to consist largely of tissue engaged in the formation of red blood corpuscles. And he regards the condition as a disease primarily of the bone marrow. But Dr. Russell had seen his patient with an enlarged spleen at least six years before the condition of cyanosis developed. In both these cases the spleen appeared to be only engorged and not to present any indication of being primarily diseased.

CHLOROMA.

I may still more briefly allude to a condition in which the spleen is involved—namely, that of chloroma. In this rare disease, in which lymphoid tumours of a green colour occur throughout the body, the blood presents the characteristics of a lymphocythæmia or lymphæmia and the spleen is enlarged by infiltration with lymphoid deposits or lymphocytes. The relation between chloroma and lymphatic leukæmia is believed to be very close but there remains no doubt a great deal of work to be done on both these conditions.

PRIMARY AND SECONDARY ANÆMIAS.

The attempt to distinguish between primary and secondary anæmias seems here to fail completely. The recognised primary anæmias are: (*a*) chlorosis and (*b*) pernicious anæmia. Among the secondary anæmias must be classed: (*a*) splenic anæmia, (*b*) infantile splenic anæmia (von Jaksch's), and (*c*) the anæmia of leukæmia. But after we have been searching into the pathology of these diseases, what essential difference do we see between these groups? In one of the primary anæmias, pernicious anæmia, a large number of facts have been collected which at least suggest, if they do no more, that some kind of toxic or infective process is at work which is not any obvious defect of food, or loss of blood, or continuous vital strain, or primary disease of any organ charged with blood formation; for although the spleen is sometimes enlarged it is not so constantly; it is often indistinguishable from that of health, and, moreover, the share of the spleen in the formation of the blood is at least doubtful. On the other hand, in splenic anæmia of adults the only explanation which at all satisfactorily introduces the spleen as a part of the causation regards the splenic lesion not as the primary condition but as an intermediate factor between absorption of toxins from the intestines and the morbid condition of the blood.

Secondly, in infantile splenic anæmia intestinal poisoning is again rather widely accepted as the essential cause and the splenic enlargement is looked upon as rather an accident than otherwise, so that in a great number of cases very little is said of the condition of the spleen beyond the fact that it presents an enlargement which is very different in different cases.

With regard to leukæmia the early impressions seem to have been twofold: one that the anæmia was due to the disease of the spleen or glands or marrow, whichever one or two or three were involved; the other that the extreme leucocytosis either necessitated a smaller number of red corpuscles as a matter of crowding out, or that the undue proportion of leucocytes represented an imperfect condition of the blood, of which the red corpuscles were the highest development. But with regard to the spleen it is almost certain that the primary lesion does not lie there, nor even in lymphatic leukæmia is it certain that the cause lies in the glands.

Thus we have reason to believe that we can see some cause in an anæmia regarded as primary and that in a form regarded as secondary the cause does not really lie in the organs originally thought to be primarily at fault. Indeed, primary is almost as unsatisfactory a group as idiopathic. It is only valid so long as our ignorance lasts or till fresh facts come before us to advance our knowledge. It is, indeed, no question of causeful or causeless cases; it is only the question of whether the essentials of the blood are diminished by destructive hæmolysis or by failure of production—i.e., anhæmogenesis or deficient hæmogenesis. Or, thirdly, whether the deficiency of essentials is only relative or due to an increased quantity of plasma.[8] Hæmorrhage is a coarse hæmolysis; pernicious anæmia is a hæmolysis in detail. Starvation is a coarse anhæmogenesis; various processes of disease are anhæmogenesis in detail. It is for us to find out what in each case are the causes of hæmolysis or anhæmogenesis. Of hæmolysis we have other examples in chlorate of potassium poisoning and in paroxysmal hæmoglobinuria. As a cause of the hæmolysis of pernicious anæmia we are led to look to some infective process, peculiar in this—that it alone, if it is a single toxin, should produce a hæmolysis while so many others do the reverse. Of anhæmogenesis or deficient hæmogenesis we have examples in nearly all the cases where anæmia follows upon prolonged infective disease. It may be very difficult to estimate the share which is to be attributed to actual deficiency in food supplied and that which other processes may have. But there are enough instances of anæmia occurring in cases when the food is not necessarily much diminished to make it probable that if the processes of splenic anæmia in children, splenic anæmia in adults, and chlorosis are due to some kind of unbottled poison inhibiting the process of blood formation, the same is taking place to account for the anæmia of syphilis, rheumatism, phthisis, empyema, prolonged sepsis from whatever cause, Bright's disease, and many other allied conditions.

CONCLUSION.

In looking back on these "disorders of the spleen," of which my review has been so fragmentary and imperfect, one is brought to the conclusion that the spleen is more sinned against than sinning; that it is rarely responsible for the lesions which it suffers or for the complaints with which it is associated; that in the various infective disorders, in splenic anæmia, and in infantile anæmia it is probably poisoned from without; that in the different forms of leukæmia it is overcharged with the excess of leucocytes; and that only in splenic anæmia as yet is the charge seriously made against it, that itself having been poisoned from the bowel it subsequently inhibits by fresh production of poisons the formation of the blood. It is in these diseases that good results have sometimes been obtained by splenectomy, though it must be admitted that death has sometimes taken place shortly after the operation. In the other cases the primary condition must be treated, and in so far as that can be controlled or will spontaneously recover the enlargement of the spleen may be expected to subside.

In spleno-medullary leukæmia considerable reductions in size of the enlarged spleen have occurred under arsenic and sometimes under inhalations of oxygen, but a relapse appears in this disease to be almost inevitable. The spleen has also been extirpated for malarial enlargement, and it is recorded[9] that of six cases operated on four recovered.

I have, Mr. President and Gentlemen, to express to you my gratitude for your kind and considerate attention during these three lectures, which again I cannot help thinking will have fallen very far short of what you have a right to expect.

[7] American Journal of the Medical Sciences

[8] Lorrain Smith: Transactions of the Pathological Society, 1900, p. 311.

[9] Scheube: Warm Countries (English translation), p. 169.

A CASE OF PERFORATED GASTRIC ULCER IN A BOY AGED 13 YEARS; DISEASED APPENDIX; OPERATION; RECOVERY.

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ON March 16th, 1904, the patient, a boy, aged 13 years, who had previously been perfectly well, complained of some stomach-ache during the afternoon when returning from school. In the evening this became worse and he asked to be allowed to go early to bed; his mother put a hot water bottle over his stomach which relieved him in a few minutes. He got up on the morning of March 17th much better and

practically felt well except for a little abdominal pain when stooping; the exact position of the pain was not well defined. He, however, asked to be allowed not to go to school. In the morning he had some Eno's fruit salt and ate a very good dinner that day. About an hour after dinner he began to complain of severe abdominal pain and very soon became seriously ill. Dr. Wilbe was sent for and saw him between three and four o'clock in the afternoon and found him complaining of violent pain in the abdomen which he could not localise very precisely but he placed his hand towards the right side and about the umbilicus. He found him very collapsed, with a pulse of about 130, with marked rigidity of the abdomen and tenderness over the whole abdomen. The symptoms were especially marked towards the right side and upper part of the abdomen. There was no vomiting. The temperature was normal. Mr. Watson Cheyne saw the patient at 8.30 in the evening. At that time the boy looked extremely ill; there was no abdominal respiration; the alæ nasi were moving; there were marked rigidity of the whole abdomen and general tenderness but no abdominal distension. The pain and rigidity were not well localised but were on the whole most marked towards the upper part on the right side. The abdomen was tympanitic everywhere but there was no distinct obliteration of the liver dulness. There had been no vomiting. The temperature was normal. The conclusion come to was that there had been a perforation of some abdominal organ, and from the general history and symptoms pointing more towards the right side and the probability at that age that the trouble was of the form of a fulminating appendicitis an incision was in the first instance made over the seat of the appendix. On exposing the peritoneum it at once bulged out in the wound and on puncturing it gas whistled out. On enlarging the opening the small intestines were forced out, partly by the gas and partly as the result of the great rigidity of the abdominal walls, which had not become relaxed under the anæsthetic. Some thin whitish fluid also came out of the abdomen. For the most part the intestines were normal in appearance but on some of the coils of the small intestine, which came apparently from the left side of the abdomen, there were some flakes of lymph. The pelvis and lower part of the abdomen were well irrigated with salt solution till the fluid returned clear, and the intestines were then, gradually but with considerable difficulty, returned to the abdominal cavity. The cæcum and appendix were now pulled out. The appendix was long, thickened, a good deal reddened, and contained a large concretion; but there was no perforation of the appendix nor of the cæcum in the neighbourhood. The appendix was removed in the usual manner.

As it was evident that there must be some graver lesion than the condition of the appendix to account for the state of matters and as practically the whole of the small intestine had been seen, and as also there was no fæcal material present in the abdominal cavity, a second incision was now made over the stomach. At first nothing seemed to be amiss. The body of the stomach and the pyloric end seemed perfectly healthy; the region of the duodenum was examined; the stomach was turned over and the posterior surface palpated and still no perforation was found. On further examination of the anterior surface high up towards the cardiac end some turbid fluid and gas bubbled up. After wiping that away, and directing a good light into the cavity high up under the diaphragm, a round perforation was found on the anterior surface of the stomach about an inch from the cardiac end which would have admitted a small slate pencil. From this perforation gastric juice and gas were escaping. There was no thickening around; it was a clean punched-out hole and all the structures in the neighbourhood seemed perfectly healthy. The edges of the ulcer were inverted with a row of catgut sutures and a second row was then put outside. The peritoneal cavity in the neighbourhood was thoroughly sponged out and the whole cavity again washed out with salt solution. A drainage tube was passed down towards the seat of the perforation, another towards the left loin, and another (from the lower wound) towards the pelvis. The rest of the wounds were stitched up. The boy stood the operation very well and his pulse after it was 120. On the night of March 18th the wounds were dressed. There had been very little discharge. The abdomen was very much distended. The pulse was 130 and the temperature was 99·2° F. There was a good deal of tenderness everywhere. No flatus had been passed. There was very little sickness. The boy had not slept and was somewhat excited. On the whole he looked rather better than he did on the previous day. He had been having rectal feeding with sips of water by the mouth. On the 19th the abdomen was still in much the same condition but the patient did not seem any worse than he was on the 18th. The pulse and temperature were the same. There was less tenderness at the lower part of the abdomen and there had been no vomiting. A little flatus had been passed but not enough to give him relief. Enemata had been given but without any result. At our visit in the evening we gave him an enema again and evacuated some fæces and flatus which relieved him very much. The drainage tubes were pulled out and the greater portion cut off, leaving only a small part projecting into the peritoneal cavity. There was very little discharge. On the 20th the patient was distinctly better. The abdomen was not so tense but still very much distended. He had passed a little flatus and slept a little during the night. The tubes were left out. There was very little discharge. He began to take small doses of salines and salol. On the 22nd the patient had a good action of the bowels in the afternoon and the abdomen was much less distended. He was very much better. On the 23rd feeding by the mouth was begun. From this date the boy went on uninterruptedly well. Solid food was allowed on April 1st. The wounds had completely healed on the 13th. The patient was allowed up for the first time on the 14th and went out in a bath-chair. On the 25th the boy was in high spirits and had apparently perfectly recovered.

The interest of this case lies, in the first place, in the occurrence of a perforating gastric ulcer in a boy, aged 13 years. We can find no record of perforation of the stomach in a male at such an early age. In this case the ulcer was typically a peptic ulcer. Gastric ulcers have been found in younger children but apparently only of a tuberculous character. Thus Dr. G. F. Still[1] recorded five examples of tuberculous ulcers of the stomach in children, in three of which histological and bacteriological examination had been made with positive results. In all cases the ulcers were small. The first was a child, aged three and a half years, who was admitted with vomiting and ascites due to tuberculous peritonitis; the second was a child, aged ten months, suffering from cough and tuberculous meningitis, and, as shown after death, from generalised tuberculosis; the third was a case of tuberculous peritonitis; the fourth was a boy, aged nine years, who was also affected with tuberculous peritonitis; and the fifth was a child, aged two years, suffering from the same disease. The author had only found five cases out of 226 necropsies. There were no clinical symptoms associated with them. In one of the five cases perforation had occurred but extravasation had been prevented by adhesions. In the above case there was no sign whatever of tuberculosis either about the stomach or the abdomen generally nor was there any reason for suspecting it. As to the cause of the ulcer in this boy we cannot make any suggestion and there were no previous symptoms whatever leading to a suspicion that anything was wrong with the stomach.

The second point of interest is that, partly as the result of the symptoms pointing somewhat towards the appendix and partly on account of the great rarity of the actual condition, the appendix was in the first place cut down upon and a *diseased appendix* was found. The condition of the boy was so extremely bad that one was very much tempted to hope that that might be the cause of the whole trouble; but the presence of free gas in the abdomen made it absolutely certain that perforation of a hollow viscus other than the appendix must have taken place, and the absence of fæcal material in the abdominal cavity and the fact that practically the whole of the small intestines had passed under review when they were forced out of the wound led us to assume that this perforation must have taken place either in the stomach or duodenum.

The third point of interest is the situation of the ulcer. It was situated so high up and was so difficult of access that its presence was nearly overlooked. Before it was found the whole of the lower part of the stomach had been examined, the duodenum had been investigated, the stomach had been turned up and the posterior part searched, and had it not been that we were convinced that there must be a perforation, and that a further search was made towards the upper part of the stomach, the condition might have been overlooked.

[1] Brit. Med. Jour., May 6th, 1899.

200 CASES OF ACUTE LOBAR PNEUMONIA.[1]

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THE following paper is based upon the observation of over 200 cases of acute lobar pneumonia. I have confined myself more particularly to a series of 150 cases upon which I made notes and kept a record of the treatment. These observations and notes were made in the years 1899 to 1901, while I was acting as assistant medical officer in Mill-road Infirmary, Liverpool, and I would like to avail myself of this opportunity to thank Dr. Nathan Raw for kindly allowing me to make use of this material.

There is no intention on my part of describing pneumonia as a clinical entity—this has been done frequently by those much more fitted for the task than I; nor do I propose to lay before you the result of any laboratory research into any special feature of the disease, but while in daily contact with this large number of cases certain points in the diagnosis, prognosis, and treatment impressed themselves upon my mind and I am here attempting to put these points before you in the hope that I may have the benefit of your much larger experience. Much of what follows is probably not new but is to my mind insufficiently emphasised in the literature; some is heterodox and to it I beg your attention and a sympathetic attitude, for it is with much diffidence that I am here to support what I know is unorthodox.

It is essential that we should from the first have a definite conception of the type of case which has been under observation. The following statistics will show us almost at a glance. In 150 cases there were 33 patients below 20 years of age, with a mortality of 9·1 per cent.; 89 between 20 and 50 years of age, with a mortality of 41·5 per cent.; and 28 over and including 50 years of age, with a mortality of 75 per cent. The total mortality was 61, or a death-rate of 40·5 per cent. 21 of these patients, or one-third of the fatal cases, were admitted moribund and died within 24 hours of admission. On eliminating these there are still remaining 129 cases with 40 deaths, or a mortality of 31 per cent.

Alcoholic excess is recognised as one of the most important of the etiological factors in pneumonia, and in this series it is much in evidence. In 65 of the 150 cases a history of alcoholic excess was obtained; in other words, 43 3 per cent. of the total admissions had taken alcohol to excess. Of these 65 patients 37 died, giving a mortality of 57 per cent. among the alcoholics. Looking at it from another point of view we find that amongst the 61 fatal cases 37 were excessive drinkers, that is 60 per cent. of the total mortality. Everyone knows how difficult it is in many cases to obtain a history of alcoholic excess, therefore in all probability the proportion of alcoholics is still larger. These patients were paupers with their powers of resistance greatly lowered in many cases by alcohol, underfeeding, overwork, and exposure. Such was the material which I had the privilege of observing—the class of case which teaches most, for it requires every possible therapeutic aid. All will admit that many cases of pneumonia are such that the patients get well with almost any, or even perhaps in spite of, treatment; some, on the other hand, are doomed to death from the first, so malignant is their attack, and it is really only that small number of cases in which the question of the fate of the patient is in the balance which offers the greatest scope for treatment and where one feels that careful, accurate, and prompt measures turn the balance in the patient's favour.

Physical examination of the patient.—Everyone admits that the general clinical signs of pneumonia are of more importance in the diagnosis than mere local physical signs and it would be futile here to enumerate the typical symptoms and clinical signs of an acute case, but there are several points of practical value which I feel are worthy of mention. Admitting that we must from the first take every care to spare the heart, still there can be no doubt that a careful, thorough examination should be made not only at the first but also whenever there is the slightest fear or doubt as to the changes and processes taking place; more especially do I believe this to be necessary towards the end of the first week. In order to simplify this examination I am convinced of the value of a shirt open not only in the front of the neck but also down the whole length of the body. With a shirt of this kind the front of the chest, the abdomen, and the axillæ can be bared without moving the patient. There is too much hesitation in laying bare the chest, the axillæ, and the abdomen, at any rate in males. The fear of such patients "catching cold" is groundless and the great advantage of exposing the whole area to view at the same time is obvious. After a careful examination of the apices in front with the arms lying by the side, the patient should be asked to place both his hands well above his head; in this position both axillæ are easily examined and I am confident that there is no part of the chest which lends itself more readily to examination or which better repays careful attention. In the right axilla you have a portion of all three lobes and I have noticed the frequency with which any doubt in diagnosis is cleared up by careful auscultation and percussion of this part of the chest. If the pneumonia is basal in site the lesion almost always approaches the great fissure as it runs across the axilla and one can demonstrate the definite change of note on percussing from the middle or upper to the lower lobe. If the upper lobe be diseased it is easily examined from the axilla, extending as it does from the fourth rib up to the apex of the axilla and covered with a minimum thickness of chest wall, whilst if the examination be made from the front you have the pectoral muscles, and if from behind the scapular muscles, interfering with its examination. When the pneumonia happens to be central in position the physical signs usually show themselves first in the axilla and are late in appearing. This delay in the appearance of the physical signs of consolidation may, however, be a feature in a case quite apart from the existence of central pneumonia. If the toxæmia be very severe and the patient delirious, with bloodshot eyes, it is occasionally not at all easy to diagnose the condition from that of typhus fever and then any physical signs pointing to commencing consolidation are important. In several such cases I found that as the consolidation approached the surface in the axilla the first changes to be noticed were the appearance of a tympanitic quality about the percussion note and a diminution of the breath sounds, together with a prolongation of the expiratory murmur. This diminution of the breath sounds, one of the most important of the early signs of pneumonia, is probably due to an engorged condition of the lung interfering with the normal elasticity "and consequently much restricted respiratory expansion." This is noted by Lewis A. Conner and George E. Dodge[2] in a paper to which I will refer later. On examining the back when the pneumonia is affecting the lower lobe the physical signs are most often well marked about the seventh, eighth, and ninth spaces just within the angle of the scapula, and when examining with the patient on his side in the early stage of the disease before consolidation is well defined it is well to remember that the side which is uppermost nearly always yields to percussion a higher pitched note. This is probably due to the fact that when one percusses the upper side one is percussing on to the spinal column, whereas on percussing the under portion of the back the bed will tend to act as a resonator and so yield a fuller note. When in such a case there is any doubt as to the cause of the impairment of note one of two things must be done—either you get the patient to sit up and to lean forward, which is undoubtedly the best method so long as the patient is sthenic and vigorous, or you have the patient lying first on one side and then on the other, and in that way check your first impression. As medical tutor to the Royal Infirmary, Liverpool, I have pointed out this difficulty to the students for the last three years and was much interested to find it discussed in the *American Journal of the Medical Sciences* by Lewis A. Conner and George E. Dodge, apparently their communication being the first mention in the literature of this peculiarity. I had already written my paper when I read their article and am glad to support their statement.

In the examination of the heart I found it very useful after having carefully percussed out the deep cardiac dulness to mark it out with a piece of lunar caustic. This is done at the first examination; the marks persist and are of the greatest help in showing any alteration in the extent of the cardiac dulness due to the disease, whether the

[1] A paper read before the Liverpool Medical Institution on Nov. 19th, 1903.

[2] American Journal of the Medical Sciences, vol. cxxvi., p. 389.

change in dulness be due to dilatation of the heart, pericarditis with effusion, or displacement of the viscus.

Fortunately the anterior margins of the lungs very frequently escape consolidation; it is therefore generally possible to define the right and left margins of the heart with some degree of certainty. It is perhaps hardly necessary to say that the deep dulness is best obtained by very light and delicate percussion.

The circulation in pneumonia.—The heart is the organ around which most of the anxiety in an attack of pneumonia centres. The signs of cardiac failure are the danger signals and treatment is practically from the first to preserve and to strengthen the cardiac muscle. The times of strain are two: first, during the onset of hepatisation, when there is a sudden diminution in the capillary area in the lung. In its effect on the heart this may be compared to a rapidly produced stenosis of the pulmonary artery, the right ventricle probably dilating to meet the sudden strain. The second begins any time after the fourth or fifth day up to the crisis and even following the latter. It is due to the toxæmia and the continued high temperature, both of which causes produce granular degeneration of the myocardium affecting the whole musculature of the heart. Strain is also present if the patient is violently delirious, the struggling and the necessary restraint most seriously exhausting the already handicapped heart. Rapid and extensive solidification of the lung, pyrexia, toxæmia, and the struggling of delirium may induce fatal cardiac asthenia even in a heart which at the onset of the pneumonia was sound; still more readily is this condition induced when the heart at the beginning of the attack is below the normal from any cause.

The most serious lesions from the point of view of prognosis are those which attack the myocardium. I feel confident that simple valvular disease, quiescent and amply compensated, where you have a good area of cardiac response from a healthy myocardium, will only in a small degree increase the gravity of the prognosis; whereas nothing could be more serious than pneumonia where the heart muscle is flabby and degenerated even although the valves are normal. In the first case, however, there is probably an obvious murmur which arrests attention and may cause undue alarm, while in the second the absence of any murmurs may cause the much more serious cardiac condition to be overlooked. In this respect chronic alcoholism, either with or without arterio-sclerosis, is a most serious etiological factor, not only because of the unstable nervous system with which it endows the patient but also because of the degenerative changes produced in the heart and more particularly in the right ventricle. As already stated, the death-rate among those admitting to excess in alcohol was 57 per cent., and it is highly probable that this was in a great measure due to the degenerated condition of their myocardium, though the diminished power of resistance to infection and consequent virulent toxæmia should not be ignored. Let us with these considerations in our mind briefly examine those cases which showed definite valvular lesions.

Mitral regurgitation.—There were seven cases in which there was a systolic murmur loudest at the apex and conducted towards the axilla. This murmur persisted throughout convalescence or was proved post mortem to be due to mitral incompetence. In these seven cases there were two deaths. One was of a woman, aged 74 years, whose pneumonia was simply a mode of dying (she also suffered from chronic interstitial nephritis, chronic bronchitis, and emphysema); the other fatal case was that of a woman, aged 44 years, addicted to drink. Her pneumonia was associated with acute rheumatism. She reacted very feebly to the pneumonia and died some days after the crisis, having been in a condition of low delirium. In the five cases in which the patients recovered the mitral regurgitation had little effect on the course of the disease with this exception that in some cases resolution appeared to be delayed.

Mitral stenosis and regurgitation were present in four cases, the respective ages being 16, 17, 32, and 47 years. The patient aged 47 years died. She had previously been an in-patient suffering from emphysema, bronchitis, and cardiac failure. A month before her death she was admitted with right hemiplegia and aphasia due to cerebral embolism. She contracted a low form of pneumonia while in hospital and died on the seventh day of the disease. The necropsy revealed grey hepatisation of the left upper lobe, marked general emphysema, extreme mitral stenosis with calcification of the mitral cusps, and some early pericarditis. In one of these four cases the deep cardiac dulness extended two and three-quarter inches to the right and for three days the pulse-rate oscillated between 120 and 135 per minute. In this case the left lower lobe was involved. In the patient aged 16 years the pneumonia was double and in the third, aged 32 years, there was pneumonia of the right lower lobe; in this case the pulse was extremely small and irregular. In two of these three cases resolution was much delayed; otherwise they ran a fairly normal course.

From a consideration of these cases I think one is justified in the assumption that mitral disease is not in itself of great moment. That it lessens a patient's chance of recovery and also probably delays resolution one must admit, but that is all. In those cases which were fatal described above the mitral lesion was obviously only a small factor in the causation of death.

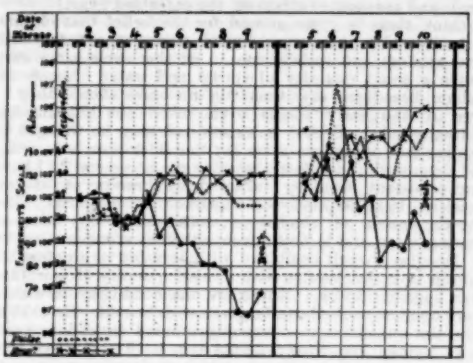
Pericarditis.—Of much greater moment is pericarditis. I found it to be a most serious complication probably because it is so potent in damaging the myocardium, especially that of the right ventricle, and also from the fact that it is sometimes simply a terminal event in a severe case, or again it may be, and I believe frequently is, a symptom of the severity. There were nine cases complicated with pericarditis; six of these died. In two serous effusion was present; both recovered. There was purulent effusion in one case and that fatal. I did not meet with any patient in whom there was adherent pericardium but consider that a lesion of that type must very greatly handicap the heart on account of the associated changes in the ventricular walls. Fusiform dilatation of a calcareous aorta was discovered post mortem in one case and malignant endocarditis in another.

Cardiac failure.—As signs pointing to heart failure and indicating the need for treatment, the following were the points to which I paid special heed. First, the general appearance of the patient. So long as the capillaries of the cheek and face are full of well aerated blood and the cerebration is active and not dulled by delirium the heart is probably doing well. Pallor of the face, empty capillaries, and low delirium indicate cardiac exhaustion. If the respirations increase in number and become shallow and if at the same time râles appear in the previously clear lung the cardiac failure is marked and the condition is grave. The signs which one obtains by a careful physical examination of the heart pointing to cardiac failure are those usually recognised—*an increase of cardiac dulness especially to the right*—and here the marks made with the caustic on the first examination are of considerable help. Alteration in the character of the heart sounds: at the apex and tricuspid areas a weakening of the first sound, at the pulmonary a muffling and softening of the second sound, which sound in favourable cases is commonly accentuated and frequently reduplicated. Later the veins in the neck become congested and there is increased epigastric pulsation. Personally the signs I looked to as indicating the first appearance of heart failure were alteration in the pulmonic second sound and in the first sound at the mitral and tricuspid areas together with an increase in the deep cardiac dulness to the right. A note should be made daily of the deep cardiac dulness.

Pulse.—There is some difference of opinion as to the value of the pulse in prognosis but there is no doubt as to the help it gives in the interpretation of the condition of the heart and vessels. In relation to the pulse in pneumonia I would like to note the following points:—

Tension.—A very soft compressible pulse with poor percussion wave early in the disease is ominous and if on making a sphygmograph there is only a slight dicrotic wave recorded one may take it that the myocardium is feeble and the prognosis is correspondingly grave. Frequency varies safely within considerable limits, but a pulse-rate of over 130 per minute for 48 hours in an adult is generally associated with a fatal issue. Normally the pulse-rate begins to drop some hours before the fall in temperature which it anticipates. If, however, during several days the rate of the pulse and the respirations slowly increase in frequence, while at the same time the temperature steadily falls, one may expect a fatal issue, even when the patient appears in other respects to be progressing favourably (see chart). Irregularities in the pulse interested me greatly and I would like to note that even in fatal cases this variation from the normal occurs much less frequently than one would expect. One often finds recorded in such cases that "the pulse is regular in force and frequency, very small volume, and of poor tension," or that "the pulse is very frequent and its tension low." Only quite rarely, except within 24 hours of death, is irregularity or intermittency of the pulse

recorded. Irregularity may occur at any period of the fever and is of least moment in the old or at the crisis. Mackenzie of Burnley[3] says: "In all cases



of acute lobar pneumonia that I have met when the pulse showed even an occasional irregularity before the crisis was reached death supervened." This has not been quite my experience, for I have notes of five cases in which there was intermission or irregularity of the pulse found before the crisis and in which the patient recovered. In one, a pneumonia complicated by advanced mitral stenosis, the pulse was extremely irregular and small in volume throughout the whole attack. This was entirely due to the stenosis and persisted during and after convalescence. In the spring of this year I watched a case of pneumonia in Dr. Barr's male ward in the Royal Infirmary, in which the patient's pulse became markedly irregular and persisted so for three days. He was in a condition of low delirium but under active and vigorous treatment recovered. This makes six cases which have come under my notice and although I cannot go quite so far as Mackenzie I hold with him in the main. One may say, therefore, that if the pulse in the early days of the attack has a frequency at or over 120 beats per minute, is small, soft, and compressible, or is irregular, then the outlook is extremely grave.

Treatment.—Rational treatment depends on a thorough comprehension of the pathology of the disease and a knowledge of its course. It still more depends on an early recognition of those physical signs and symptoms which indicate the onset of conditions dangerous to the patient. The danger signals in pneumonia are those which indicate severe toxæmia or the onset of cardiac failure. Toxæmia and cardiac failure being the two most common actual causes of death a discussion on treatment really resolves itself into the consideration of these conditions. So long as there are no signs of severe toxæmia and no indications of cardiac weakness, general treatment, careful dieting, and good nursing are all that are required. In such cases the medicinal treatment makes very little difference so far as the ultimate result is concerned, though the comfort of the patient may be greatly influenced by appropriate means which, however, do not fall to be considered here.

Before dealing with the question of the treatment of cardiac failure it will be advisable to discuss the means of preventing its appearance. This must be accomplished by peaceful and quiet surroundings, a good supply of fresh air, no unnecessary movements, the relief of pain, and the prevention of any interference with the action of the diaphragm. Sleeplessness, struggling associated with delirium, and flatulent distension of the abdomen are, in my opinion, three of the gravest conditions to be dealt with. The first produces general nervous and physical exhaustion and may end in the production of an asthenic or typhoid state. The second may rapidly induce grave cardiac failure. The third adds considerably to the work of the heart. Continued insomnia is almost fatal and much may be done in the early days of the disease to comfort and to ease the patient and so induce refreshing slumber. Cold or tepid sponging is especially soothing and at the same time tends to lower the temperature. A poultice of linseed and mustard applied to the side may induce sleep by relieving the pain of pleurisy; this pain is generally sharp and stabbing and is increased by breathing, in contradistinction to the dull, continuous, aching pain felt during the first few days either alone or contemporaneously with the pleuritic pain. This dull pain is due to the distension of the visceral pleura and capsule of the lung and is frequently relieved by the application of ice-bags placed over the engorged and distended lobes. Paraldehyde in doses of two or three drachms was occasionally useful in the alcoholic cases. It is somewhat objectionable to take and can be given either in mucilage with syrup of orange and peppermint or with a small quantity of brandy. It does not depress the heart. I did not find the chloral and digitalis mixture efficient unless given in such large doses that one feared for the depressing action of the chloral. When these methods fail I believe the best drug is opium and think that before the fifth day there is rarely any need for hesitation. Dover's powder is commonly used, but I found that it so frequently caused vomiting that I preferred to give a hypodermic injection of morphine. The rules that I followed with regard to the exhibition of morphine in pneumonia were as follows. Sleep must be obtained and some risk may justifiably be incurred to procure it. First employ simple means; those failing, inject morphine. Morphine is usually safe up to the fifth day, especially if the pupils are dilated, and it is less dangerous to the patient than the wild struggling of delirium. The wild delirium occasionally accompanying the crisis should be controlled with morphine. Morphine is dangerous if there be marked cardiac failure, if the lungs are full of bronchitic râles, if there be commencing œdema in the previously dry lung, and especially if the patient is suffering from chronic renal disease. In the almost maniacal delirium of crisis above mentioned morphine is the only drug which can be relied on and must be injected without any delay. I well remember one man, an alcoholic, on the eighth day of his pneumonia, with flushed face and dilated pupils, kneeling on the bed and struggling with the sister and two nurses. He was attempting to get out of the window. I injected a quarter of a grain of morphine and $\frac{1}{100}$th of a grain of atropine. He was shortly asleep; his temperature dropped to normal and there remained. Whatever rules one may have as guides this question will always be one to give rise to the most anxious thought and careful consideration. When it has to be decided whether in a certain case one is justified in taking a definite risk to obtain a possible and hoped for gain, generalisings often fail and the case must be settled on its merits.

Another condition fraught with danger to the heart is that of distension of the abdomen. This impedes the downward movement of the diaphragm and thus interferes with what Dr. Barr has described as the respiratory pump, the result being that this important aid to the passage of the blood through the lungs and heart is lost and the whole work is thrown on to the right ventricle. The distension causes pressure directly on the heart through the diaphragm and so adds yet another difficulty to the cardiac action. There are two common causes of distended abdomen—first, flatulence caused by the over-ingestion, and consequent fermentation, of food, especially milk; and, secondly, a paralytic distension of the intestines due to the virulence of the toxæmia. For the first it is essential to cut down the quantity of food, especially milk, and advisable to give a dose of calomel, say, from two to five grains, by the mouth. This should be followed by repeated doses of some antiseptic such as tincture of iodine and glycerine as recommended by Dr. Barr,[4] or 10 minims of glycerine of carbolic acid. I would now feel inclined to use sodium taurocholate in five-grain pills thrice daily, having found it most serviceable in some cases of intestinal flatulence. The above treatment, supplemented with a turpentine enema, is usually efficacious. Paralytic distension is much more difficult to relieve and more can be done by general than local treatment, though here also calomel is of value followed by enemata.

We will now consider what is to be done when the pulse becomes more frequent, smaller in volume, lower in tension, possibly intermittent or irregular. At the same time there is an increase of deep cardiac dulness to the right and the sounds of the heart are noticed to be feebler. The answer of orthodox medicine to-day is that these are the indications of commencing cardiac failure and that

[3] Mackenzie: The Pulse.

[4] James Barr: Pneumonia, Brit. Med. Jour., June 9th and 16th, 1900.

cardiac failure must be anticipated by cardiac stimulants, more especially in pneumonia by alcohol. I do not agree with this conclusion and hope to give you good reasons for my view. That these signs are the signs of cardiac failure is true, that a cardiac stimulant or tonic is required is evident, but to exhibit alcohol would, I believe, be unsound treatment. Alcohol has its place in the treatment of pneumonia both during the acute stage and convalescence, but I do not believe that its rôle is that of a cardiac stimulant, for as Sir Samuel Wilks says in speaking of it[5]: "It is difficult to know why such a remedy is called a stimulant. From the change of name to sedative I have got much practical good."

You must all have noted the steady change of opinion in the profession as to the value of alcohol in pneumonia. At the present time nearly every writer warns his readers of the danger of overdosing patients with alcohol and the necessity of withholding it as long as possible. Out of many possible instances may I quote one. Burney Yeo,[6] says: "The routine administration of alcohol in pneumonia, especially in the early stages with the idea of preventing cardiac failure later is, we think, a serious error. Alcohol produces vasomotor paresis and causes dilatation of the vessels and *it must therefore aggravate or induce tendencies to vascular engorgement.*" (The italics are mine.) "It acts like a poison to many persons and causes considerable nervous and general depression after its first stimulating effect passes off; it increases the amount of toxic substances in the blood and the elimination of considerable quantities of alcohol must impose a severe strain on the already overtaxed organs of excretion." That, in the light of the views held by Todd and his followers, is indeed a great advance. Even in 1900 in this institution I heard a member state that he always put every "pneumonia" on six ounces of brandy in the 24 hours, together with ammonium carbonate and digitalis—routine treatment with a vengeance! There was a time when it was customary to bleed pneumonias and when this method of treatment was supported by all the acumen and experience of the lights of medicine. The public at that time held the same views and history records that a medical man was sued for damages on the ground that he had caused the death of his patient by neglecting to extract the customary ounces of blood. A different version of the same story occurred recently. This time an action for damages was taken out against a physician on the death of his patient because the patient had not received alcohol. The public used to swear by bleeding, now they swear by brandy. The profession have put venesection into a secondary position in the treatment of pneumonia and already they have begun to modify very considerably their views as to the value of alcohol.

The action of alcohol on the circulation is briefly as follows. Its primary action is on the mucous membrane of the mouth, œsophagus, and stomach, and in virtue of this action it undoubtedly acts reflexly as a cardiac stimulant. This stimulation is neither prolonged nor powerful. After its absorption alcohol exerts its specific action—dilating the peripheral blood-vessels and lowering the blood pressure, thus tending to empty the arteries and to fill the veins. On the heart itself, directly, alcohol seems to have no effect at all; in large doses it enfeebles it.[7] Such is the opinion of Professor C. S. Sherrington. Its action on the centres in the bulb is from the first depressant. As a food it need not be considered. It is not given as a food. The indications for its exhibition, according to those who advocate it, are those of cardiac failure and it is given to meet that failure. It is oxidised in the body and therefore does give rise to heat and energy but this is of secondary importance. It is undoubtedly given for its specific action on the circulation and nervous system. Bearing these facts in mind, in what way may alcohol be employed with advantage in pneumonia? The total action of alcohol on the heart being depressant it is futile to give it in cases of commencing cardiac failure with the idea that you are combating that failure by giving a specific cardiac stimulant. The peripheral vessels are, as a rule, sufficiently dilated in response to the pyrexia and there is no useful object to be gained by further dilating them with alcohol. During the initial rigor, when the peripheral vessels are all contracted and there is marked internal congestion, relief and comfort may be obtained by suitable doses of alcohol in the form of hot drinks; or again occasionally after the crisis during the period of convalescence small quantities of alcohol might be used with benefit to prevent contraction of the peripheral vessels and consequent strain on the enfeebled heart.

I think there is some ground for the belief that chronic alcoholics take their nourishment during the fever with more comfort and satisfaction if at the same time they receive a small quantity of spirits and water, though Sir William Broadbent says that "in no cases should they be given in the early stages even when the patient has habitually taken alcohol in excess and may be thought to have become dependent upon it; the safer plan is to withhold them until it is clear that they are necessary." I have seen persistent vomiting initiated by brandy on several occasions in those previously unaccustomed to spirits. The narcotic action of alcohol is occasionally of value in securing sleep and is best given either as recommended by Sir Douglas Powell combined with infusion or tincture of digitalis or in conjunction with a small quantity of morphine given hypodermically. These are the conditions in which, in my opinion, alcohol can be given with benefit. To exhibit it in the quantities so commonly ordered in serious cases is, as Burney Yeo wisely points out, to hasten that very condition of cardiac asthenia which it is our one aim to prevent.

We have not time to consider the toxic effects of alcohol on the protoplasm of the heart muscle accentuating the degenerative changes inaugurated by pyrexia and toxæmia; its action in binding the oxygen more firmly to the hæmoglobin, thus preventing the fullest supply of oxygen to the tissues; its action in shortening diastole or the resting period of the heart's muscle; or its action in interfering with the nutrition of the heart muscle by diminishing the flow of blood in the coronary arteries and the elimination of waste material, both of which take place mainly during diastole. All these factors, slight in themselves, tend to the production of cardiac failure. I quite realise that I shall be met with the query, "To what end are all these statements when we know what pneumonia is? We have seen patients live who but for alcohol would have died; we have given alcohol and watched its effects; we are convinced it is a cardiac stimulant." My answer to this is that these convictions are based upon statements and observations which have not been subjected to a sufficiently searching criticism. Tradition is largely responsible for these beliefs and arguments of the *post hoc propter hoc* type have perpetuated them.

At the present time there are two factors which act most powerfully in prolonging the life of the orthodox views as to the administration of alcohol. The first is that students are biased from the very beginning—very few have ever seen a severe pneumonia treated without alcohol and, in fact, I might say that the same holds good amongst qualified men, only a small percentage of whom have watched or treated cases of grave pneumonia in which alcohol was not administered. A student becomes qualified and enters on practice believing that he must administer alcohol under certain conditions. In the majority of instances not the shadow of a doubt ever crosses his mind as to its efficacy and the result is that if the patient lives after the exhibition of large doses of brandy he believes that the brandy was largely instrumental in the recovery, whilst if the patient dies he consoles himself with the thought that everything possible had been done to prevent the fatal issue. The second factor is possibly even more potent, though I hardly like to mention it. The general public believe in brandy. It is "the stimulant," and if a friend or relative is seriously ill they are never happy unless brandy or some other alcoholic drink is ordered. It takes a strong-minded medical man to withstand this, and although one may not care to admit it lay opinion in this matter cannot but have a far-reaching effect. Unless a man has very definite reasons for preferring to do without alcohol in the treatment of a case he will naturally yield to the openly expressed desires of the patient's friends and relatives. When anyone considers alcohol a necessity, exhibits it on the first appearance of an unfavourable sign, and consistently follows this line of treatment in blind faith, I hold that the value of his opinion must be much impaired, for his experience is hopelessly one-sided—he knows only one aspect of the question. One must admit, I think, that the above describes the majority of men practising at the present time. That the medical men take its value for granted and the general public demand its exhibition are, in my opinion,

[5] The Practitioner, November, 1902.
[6] I. Burney Yeo: Manual of Medical Treatment, vol., i. p. 581.
[7] John C. Hemmeter: Studies from the Biological Laboratory of Johns Hopkins University, 1889, vol. iv., No. 5.

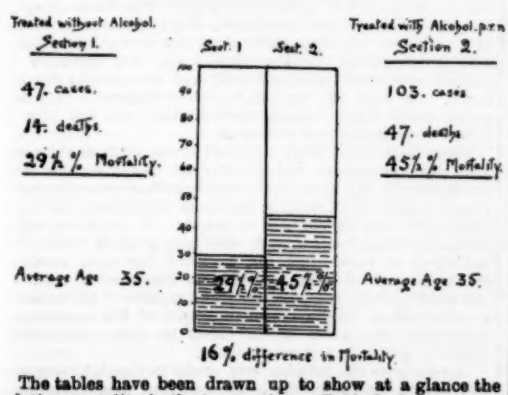
the two factors which are chiefly responsible for the persistent belief and faith in alcohol as a cardiac stimulant. I will admit that for two years after being qualified I could not conscientiously have treated a serious case of pneumonia without ordering alcohol. One of my teachers, a man for whose opinion I still have the very highest respect, taught me that the treatment of pneumonia was, in brief, "bed, poultice, and stimulants according to the pulse," and that treatment I followed.

In 1897, when house physician in the Royal Infirmary and later at Mill-road Infirmary, I carefully watched the effect of alcohol in pneumonia and my faith in its efficacy as a cardiac stimulant slowly began to be shaken. In fact, I began to wonder whether it was not even detrimental to the patients to receive alcohol in the orthodox quantities. While acting as assistant medical officer in the latter infirmary I had the opportunity of carrying out a line of treatment in which the patients did not receive any alcohol and I now lay before you the results.

The 150 cases to which I have already referred and on which this paper is based are divided into two sections. The first is composed of 47 cases. These were not in any way selected. Every case that came in on certain days was included in this section and came more especially under my care. Throughout they received no alcohol. In the second section are included 103 patients who were admitted on the remaining days of the week and who were placed under the care of the other assistant medical officers. They received alcohol when the ordinarily accepted indications for its use arose. The patients in each section were of the same type, they were drawn from the same districts, and were attacked at the same seasons of the year. The nursing was much the same throughout the hospital and the food came from a common kitchen. Under such similar conditions if we find that any particular line of treatment gives exceptionally good results in a large series of cases one is justified, I think, in ascribing to it some proportion of the success. The result in these 150 cases was definitely, one might say startlingly, in favour of that treatment in which alcohol was not administered. It is a common saying that anything can be proved by means of statistics, but I am unable to see how the most ardent advocate of alcohol as a therapeutic agent can fail to be impressed by the result of withholding it in the above series of 47 cases. There is no desire on my part to juggle with figures. I have taken great care in drawing up these tables to eliminate every source of error and am content to allow the tables to speak for themselves. It has been put to me that possibly some of the patients in Section 1 might have been saved if only they had been given alcohol. That, of course, cannot be contradicted, and possibly if I were now to treat those cases there might be occasions on which I would exhibit alcohol following those indications for its use which I have laid down. As a matter of fact, however, practically all those conditions in which alcohol may be used can be efficiently met by other drugs. And for the purpose of comparing the results it was obviously wiser to eliminate alcohol entirely from the treatment.

TABLE I.

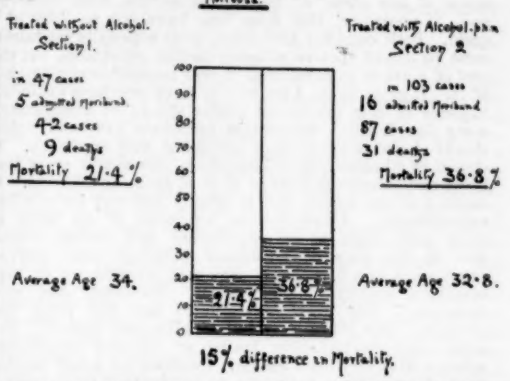
Comparison of the Result of Treatment



The tables have been drawn up to show at a glance the relative mortality in the two sections. Table I. shows a mortality of 29 5 per cent. occurring in those treated without alcohol as compared with 45·5 per cent. in Section 2, giving a difference in mortality of 16 per cent. This was such an astonishing difference that I thought it might possibly be due to a larger preponderance of patients admitted moribund into Section 2 than into Section 1. Table II. shows the

TABLE II.

Comparison of the Result of Treatment, after the Elimination of those admitted Moribund.



result of eliminating from the statistics all those dying within 24 hours of admission. The mortality in Section 1 then becomes 21·4 per cent., and in Section 2 36·8 per cent.—a difference in mortality of 15 per cent. As the death-rate varies so much in the different age periods I have compared the two sections from this standpoint and find that before eliminating the moribund cases the average age in each section was 35 years, whilst after eliminating those dying within 24 hours of admission the average age in Section 1 was 34 years and that in Section 2 was 32·8 years. We note, therefore, a difference of 15 per cent. in the mortality remaining after the elimination of the moribund cases—the two sections having for all practical purposes the same average age. There may possibly be, and probably there are, several causes for this variation in death-rate. Chance itself may account for some of it, but the obvious and outstanding cause is the administration of alcohol in one section and its non-administration in the other, and I believe that it is this factor which is largely responsible for the difference in mortality.

The drugs which we used in order to prevent or to counteract cardiac failure were practically four: strychnine, digitalis, caffeine, and ammonium carbonate. Strychnine and caffeine are recognised as good stimulating cardiac tonics. Digitalis is a more purely cardiac tonic. In the administration of strychnine one must be careful neither to begin too soon nor to give too large doses, for it must be remembered that there is only a certain definite reserve force in each heart that can be called upon. The main object must therefore be to spare the heart from every strain and only to use cardiac stimulants when absolutely necessary. Both strychnine and digitalis I preferred to administer hypodermically and when given in sufficient doses they will obtain from the heart a large proportion of its possible energy. In alcoholic cases more especially is it advisable to give digitalis hypodermically because, as O. T. Osborne[8] points out, digitalis is absorbed with great difficulty from the stomach in such patients. Digitalis slows the heart and simultaneously increases the force of its contraction, tending to raise the blood pressure by contracting the peripheral vessels.

As an example of the value of digitalis in contradistinction to alcohol in its action on the heart Sir Samuel Wilks relates a very suggestive case.[9] "A young lady, for many years the subject of mitral disease, had been for some time growing worse until at last she took to her bed" and he was asked to see her. "It was a matter of formality as she was thought to be dying. She was lying in bed gasping, with a fluttering heart and an almost imperceptible, irregular pulse, and semi-conscious. She was being plied with brandy in order to keep her alive. The two medical men who were with her did not perceive that they were poisoning her but nevertheless

[8] O. T. Osborne: What ought we to expect from Cardiac Drugs in Heart Weakness? Medical News, 1903. vol. lxxxiii., p. 541.
[9] The Practitioner, November, 1902.

assented to my strong wish to stop the spirit. This was done and 15 drops of tincture of digitalis were to be given every hour for a short time. After a few doses the frequency of the pulse was lessened. She breathed better and was more sensible. She then continued the remedy to a less amount. She rapidly improved."

Strychnine stimulates the cardiac centre, cardiac ganglia and nerves, and also in a marked degree the respiratory centre. One-fiftieth of a grain was given every four hours if any signs of cardiac exhaustion were observed and, if necessary, this dose was increased to $\frac{1}{15}$th of a grain. Both camphor and musk, more especially the latter, must be looked upon as valuable cardiac stimulants, but the cost of musk is so great that it was impossible to make use of it. If given at all, I am told by those who have exhibited it, doses of from five to ten grains should be administered every few hours. Ammonium carbonate has been found chiefly of use in those cases associated with bronchitis. It should be administered in large doses—ten grains every four hours and occasional doses of 20 or 30 grains in addition. It rarely produces emesis and is usually followed by very free expectoration. I first became convinced of the value of these large doses as an expectorant and cardiac stimulant in the case of a woman suffering from marked emphysema and bronchitis. She was propped up in bed, breathing rapidly, tossing about, distressed, and very cyanosed. Her heart was dilated and her pulse was irregular. Her lungs were full of râles and rhonchi. For some days she had been taking an ordinary expectorant mixture with very little benefit. I ordered her a half-drachm dose of ammonium carbonate, to be repeated in an hour if it had not produced emesis. Following the second dose she began to expectorate large quantities of muco-pus and was greatly relieved. Since then I have frequently tried these large doses and generally found marked benefit follow their exhibition not only in cases of bronchitis and emphysema but also in pneumonia associated with bronchitis in which the expectoration tends to be profuse and of a bronchitic character. Caffeine can be administered either as strong coffee or as the citrate. It acts as a stimulant, cardiac tonic, as a nervine tonic and also as a cerebral stimulant. This latter property would make one hesitate to give it when the insomnia is troublesome. Its action on the kidneys may help to eliminate toxic matters.

There is one form of treatment to which I would like to refer in conclusion—namely, the application of icebags to the abdomen so strongly recommended by Dr. Barr.[10] These were applied in some 20 cases and with benefit. The cold applied to the abdomen steadies the temperature and by acting on the splanchnic area improves the tension and volume of the pulse. It increases the depth of the respirations and thus greatly assists the heart by increasing the force of the respiratory pump. It also, according to some authorities, distinctly increases the value of digitalis in pneumonia by tending to bring the circulation into equilibrium.

If one determines to use the icebag it is most important that it should be firmly fixed, otherwise it will tend to slip down on to the groin and be a source of great discomfort. The sensitive groins should be protected with wool or lint. A medical man, a member of the Liverpool Medical Institution, has mentioned to me the comfort and benefit which he received from the icebag during an attack of pneumonia and he also referred to the discomfort which he experienced until his groins had been protected and the icebag firmly fixed in its correct position.

Liverpool.

FOUR CASES OF ACUTE INTESTINAL INTUSSUSCEPTION; OPERATION; RECOVERY.

BY F. C. WALLIS, F.R.C.S. ENG.,
SURGEON TO CHARING CROSS HOSPITAL AND TO THE METROPOLITAN HOSPITAL.

CASE 1.—The patient, aged two years and three months, was admitted to Charing Cross Hospital on Jan. 29th, 1903, with a history of abdominal pain of one week's duration. The motions were normal. The pain was paroxysmal. Nothing could be felt per rectum on admission but after an enema blood and mucus were passed.

Operation.—On the same day under chloroform a firm transverse tumour could be made out at the level of the umbilicus (nothing being felt before the anæsthetic owing to straining). After a two-inch incision above the umbilicus the intussusception was easily reduced; it was of the ileo-cæcal variety. There was slight œdema of the gut. The abdomen was closed in one layer. The operation occupied 12 minutes. Recovery was uneventful.

CASE 2.—The patient, a child, aged seven months, was admitted to the Metropolitan Hospital under my care on July 21st, 1903, with vomiting and collapse for one and a half hours. The pulse could hardly be felt and the extremities and nose were cold. Nothing abnormal could be made out in the abdomen. On the next day, vomiting continuing and blood being passed per rectum at 4 30 P.M. and 6 P.M., the presence of a swelling in the hepatic region was diagnosed and operation was decided on. The temperature was 103° F. in the morning.

Operation.—Under A.C.E. mixture the tumour was made out with ease and I opened the abdomen in the right linea semilunaris by a two-inch incision. The intestines were somewhat congested and distended and it was not found possible to get at the intussusception until the incision had been enlarged and the gut allowed to escape. This was protected by hot cloths and the intussusception (of the ileo-cæcal variety) being drawn up into the wound seven inches of invaginated gut were gradually reduced by combined pressure and traction. The invaginated gut was healthy but a good deal injected. The abdominal wound was closed by silkworm gut through all the layers of the wall. On July 23rd some blood was passed by the bowel. The temperature sank to normal on the twelfth day, after removal of the stitches, and the child was discharged on August 8th. (N.B.—There were some vomiting and diarrhœa until August 2nd, when breast-feeding was resumed.)

CASE 3.—The patient, a child, aged 11 months, was admitted to Charing Cross Hospital under my care on April 20, 1903. The history was similar to that of the last case—viz., sudden onset of vomiting, paroxysmal pain, and the passage of blood and slime per rectum on the day of admission. The pulse was 160 and the temperature was 97·4° F. An elongated tumour was readily seen and felt in the left half of the abdomen, not very tender, hard, and slightly moveable.

Operation.—This was performed seven hours from the first symptoms and one hour from admission, under chloroform and later chloroform and ether, by median incision below the umbilicus. The tumour, which was eaily hooked up by the index finger and readily reduced, was of the ileo-cæcal variety, the appendix appearing last. The operation lasted about nine minutes. The wound was closed by interrupted sutures. On April 23rd, after one drachm of castor oil, the bowels were opened twice; there was no blood or slime. On the 27th the stitches were removed. The patient was discharged in good condition.

CASE 4.—The patient, aged six months, was admitted into the Metropolitan Hospital under my care on June 27th, 1903, with a history of vomiting and much pain for one day. Blood and mucus came from the rectum and a sausage-shaped tumour was present in the right iliac region.

Operation.—Under chloroform an incision was made over the swelling in the right iliac region. The intussusception was ileo-cæcal and easily reduced. The abdomen was sutured in one layer. On June 28th there was acute bronchitis in both lungs which quickly cleared up. On the 30th the patient was much collapsed and had convulsions for four hours. On July 6th the stitches were removed. The temperature was normal on the seventh day. On the 17th the patient was discharged quite well.

These four cases were operated on as soon as the condition was recognised and no attempt to reduce the intussusception by any of the well-known methods was attempted. I have long been of opinion that such methods should not be attempted and *should not be taught*. It must be only in extremely rare cases, if ever, that any good is obtained by injections of water, gas, air, &c., and the usual results of this treatment are waste of valuable time, loss of vitality in the small patient, the possibility of a rupture of the intestine, a continuance of the symptoms, and of the condition of temporary starvation which exists in these patients and which is a serious factor in infants.

In two cases the incision was made in the right semilunar line and in the two others in the mid-line, this depending on the position of the intussusception. In all four cases the

[10] Loc. cit.

intussusception was lifted out of the abdomen, reduced, and returned. No attention was paid to the thickened and inelastic condition of the invaginated bowel—this rapidly recovers; the incision was sewn up with one set of sutures. The operation in Case 1 took 12 minutes; in Case 2 it took 15 minutes; in Case 3 nine minutes; and in Case 4 ten minutes. Feeding was commenced a few hours after the operation and recovery was uneventful in all the cases except in Case 4, which but for prompt treatment might easily have succumbed to an attack of bronchitis.

Early diagnosis is an essential point for the successful treatment of these cases. It is not necessary to wait until a tumour can be felt. Vomiting and the passage of blood-stained mucus coming on suddenly in an otherwise healthy child are sufficient indications for an anæsthetic to be given. When the abdominal walls are thus relaxed any tumour formed by the intussusception can be readily felt and dealt with at once. The dangers of waiting were exemplified in Case 2, where, because no tumour could be felt, nothing was done for 24 hours. When an anæsthetic was given the intussusception could be felt in the hepatic region of the colon. When the abdomen was opened the intussusception was quite a large one and had to be manipulated carefully during its reduction.

These cases emphasise the conclusions drawn by Mr. H. M. Rigby in his paper in THE LANCET of Feb. 7th, 1903, p. 364.

Harley-street, W.

A CASE OF ACUTE INVERSION OF THE PUERPERAL UTERUS; REDUCTION BY TAXIS; RECOVERY.

BY E. OCTAVIUS CROFT, M.D. DURH., M.R.C.S. ENG.,
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AND
ROBERT MUSCHAMP, L.R.C.P. & S. EDIN.

ACUTE inversion of the uterus is a condition which fortunately very rarely occurs. Dr. Robert Barnes[1] stated in 1885 that the accident had become so rare that many men of large experience had never seen it. In former days it was not uncommon and this may be said to be the case in countries where obstetric practice is largely in the hands of women. Let us now hope that eventually our efforts to improve the efficiency of midwives and the art of obstetrics generally may render it still more rare. Owing to the infrequency of the condition no useful statistics are available, but a number of cases have been reported and collected from time to time, especially abroad. The obviously dangerous symptoms of acute inversion are those of shock which is severe and uterine hæmorrhage, and from either or both of these conditions about one-third of the cases die. About three-fourths of the fatal cases die within half an hour. Of those who survive the immediate dangers nearly one-fourth die in the chronic stage, often when the re-establishment of menstruation leads to further hæmorrhage. Although generally due to faulty management of the third stage of labour there are doubtless certain abnormal conditions occasionally present under which the catastrophe may occur spontaneously.

For the opportunity of treating the following case, and especially for the trouble taken in obtaining a history of the accident, I am indebted to Mr. Robert Muschamp of Guiseley who was called in to see the patient and at once recognised the state of affairs and had the woman conveyed to Leeds to be placed under my care. The following is the history of the case so far as Mr. Muschamp had been able to get it from the midwife who was present at the confinement.

The patient, aged 28 years, married, was in her third pregnancy. Her first labour was instrumental and the second, which took place about two and a half years previously, was normal. On Jan. 19th, 1904, she did her day's washing and about 12.30 A.M. on the 20th she commenced with rather severe labour pains. The midwife was sent for and the child was born about 20 minutes after her arrival. The whole duration of labour was about six hours. The placenta came away without much pain 15 minutes after the delivery of the child and on the midwife slightly pulling the cord and asking the patient to cough. There was a free discharge, but, in the words of the midwife, "not what you would call a flooding." The patient, however, stated that she lost much more than she did at her previous confinements. The midwife felt the uterus before putting on the binder and it was, in her opinion, in its usual place and contracted. The binder was applied firmly. Immediately afterwards the patient was attacked by violent after-pains which continued all day. On the 21st she was easy but looked very pale and sickly. She remained in about the same condition on the 22nd. On the 23rd the bowels acted after half an ounce of castor oil. On the 24th she felt better and sat up in a chair for about ten minutes while the bed was made. She made no complaint of feeling faint and got back to bed all right. On the 25th she took a dose of liquorice powder, followed by one of castor oil and brandy. Early next morning (the 26th) she got out of bed and sat on the commode, when she had a great bearing-down sensation as though she wanted to relieve the bowels. At 6 A.M. she sent for the midwife and complained of something being down. On examination the midwife found a protrusion from the vagina to the extent of about an inch. She gently pressed this protrusion and it seemed to spring back. Mr. Muschamp was then called in by the midwife and he found the patient in a semi-collapsed condition, the temperature being subnormal and the pulse small and beating 120 per minute. On vaginal examination he found a fleshy and somewhat elastic tumour of about the size and shape of the lower three-fourths of a large Schweppe's soda-water bottle with the bottom rounded off and slightly flattened. The tumour was covered with tissue débris mixed with blood, &c., the whole giving off a very fœtid odour. On introducing his hand further—to where the neck of the uterus should have been had the tumour been merely a protrusion—he found the tumour practically continuous with the vaginal wall. The case was clearly one of complete inversion of the uterus and Mr. Muschamp at once sent the patient to the Hospital for Women and Children, Leeds, under my care.

On admission the patient was in a collapsed condition, the extremities were cold, and the pulse (126) was almost imperceptible at the wrist. The temperature was subnormal. There was very little hæmorrhage. The usual restorative measures were therefore adopted and it was thought wiser to allow the patient to recover a little if possible before doing any more. On Jan. 27th, being the eighth day of the puerperium and about 24 hours after admission, I made a careful examination. The abdomen was flaccid, not very tender, and easily palpated. No trace of the fundus uteri could be detected above the pelvic brim. On vaginal examination an offensive tenacious bloody discharge was noticed and a round swelling occupied the distended vagina, its lowest pole reaching to within about half an inch of the vulval outlet.

It was decided to attempt reduction with the aid of an anæsthetic. Mr. J. F. Dobson took the responsibility of the latter duty and I am specially obliged to him for his skilful help for reasons referred to later. The patient was placed in the left lateral position. After clearing away by douching and swabs the foul lochial discharge and débris which were present in the vagina and clinging to the surface of the tumour, I inserted my left hand completely into the vagina and satisfied myself that the mass was that of a completely inverted uterus and nothing else. There was no trace of a cervical ring, the neck of the uterus passing directly and smoothly into the vaginal fornices at the top of the pelvis. The surface of the mass was softish and of a pinkish colour, somewhat roughened and spongy, especially on its anterior aspect. This anterior portion also seemed rather more impressible and was no doubt the placental site. The right hand was then passed up above the pubes and a bimanual examination was made. No fundus uteri was detected anywhere except in the grasp of the left hand, but on pressing the fingers downwards in the hypogastric region the inverted cervix could be made out with ease and a finger could be inserted into the depression formed by the inverted structures. Owing to the contracted state of the uterus it seemed doubtful whether I should succeed in reducing the displacement by taxis or whether gradual methods would have to be adopted, such as elastic pressure by Aveling's or other procedures. I tried the former. The

[1] Obstetric Medicine and Surgery, vol. ii.

uterus was grasped in the left hand and gently compressed. The right hand was then used for counter-pressure above the pubes, the finger tips being so far as possible held in the form of a ring on the rim of the depression felt through the abdominal wall. The anterior part of the uterine wall was softer than the posterior and could be more readily indented. I took advantage of this and pressed this portion up with my thumb. As soon as a pouch was formed upwards in this part the advantage gained thus was maintained by the pressure of a gauze pad held in sponge forceps. A further portion of wall lower down was then pushed up and so on. The cervix was noted to yield as further portions bulged upwards into its canal. Ultimately the whole uterine and cervical walls were restored completely to their normal position, the last portion to return being the posterior lip of the cervix. Finally, I passed several fingers into the uterus as far the fundus and by internal and external manipulation made sure that the reduction was complete. Keeping the fingers in the uterus the cavity was freely irrigated with weak biniodide of mercury solution (1 in 5000) and finally packed from above down with iodoform gauze as the fingers were withdrawn.

It is important to emphasise the fact that during the actual progress of replacement, which occupied some eight or ten minutes, the patient suffered severely from shock and at this time required very careful attention from the anæsthetist, Mr. Dobson. Saline infusion, hypodermic injections of strychnine, and other measures were required. When the operation was over the condition markedly improved.

On the day of the operation the gauze was removed and the uterus, which retained its normal shape, was irrigated with sterilised water and repacked. On the following day the gauze drainage was discontinued. The temperature rose to 101° F. on the second day but gradually settled and from the sixth day remained normal. The extreme anæmia was dealt with in the ordinary way and rapid improvement took place. The patient left the hospital on the sixteenth day after operation and on that day a pelvic examination was made. The uterus was apparently in a condition which could be described as normal for the third week of the puerperium. There was no displacement and the uterus was symmetrical and firmly contracted. The cervix was also normal.

Remarks.—The diagnosis of the case was definite and the result of treatment was satisfactory. The point of interest is as to when the inversion took place. Mr. Muschamp suggests that a partial inversion was produced during the removal of the placenta and that the inversion was completed by the contraction which followed during the period of severe after-pains. In support of this the history relates an artificial removal of the placenta; some pulling on the cord and voluntary coughing and straining; then a free hæmorrhage and for several hours violent after-pains; a few days afterwards rectal pressure symptoms and an attempt to relieve them by aperients. The symptoms became worse on purging and on straining at stool the fundus was forced through the vulva. This explanation seems to me entirely the correct one and I think it extremely unlikely that the inversion took place on the seventh day when Mr. Muschamp was called in.

KOPLIK'S SPOTS IN THE DIAGNOSIS OF MEASLES.

BY J. C. MUIR, M.D. CANTAB.,
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IT will be readily admitted that in dealing with outbreaks of measles in a hospital or other institution one of the most important points is to make a definite diagnosis as soon as possible in every suspected case. The same is true in private practice if it be desirable and possible to shield from infection the younger or especially feeble members of the family. The comparatively slight attention paid to Koplik's spots in this country and the fact that they have even been regarded as of no great value must be my excuse for venturing to record so small a number of cases. I am indebted to Dr. J. Biernacki, medical superintendent of the Plaistow Hospital, for permission to publish them.

CASE 1.—The patient, a male, aged five years, was admitted for scarlet fever on Jan. 1st, the fifth day of the scarlatinal attack; the temperature, which had fallen to 99·8° F., rose to 102° without obvious cause. On the 2nd there was distinct broncho-pneumonia without other catarrhal symptoms. On the 4th the temperature was 103°. Koplik's spots were present; they were not looked for earlier. A diagnosis of measles was made and the patient was isolated. There were no distinct coryzal symptoms. On the 5th the rash was seen. This case is interesting as an instance of measles developing in the acute stage of scarlet fever.

CASE 2.—The patient, a male, aged four years, was admitted for diphtheria. On Dec. 31st the temperature, which previously had been normal, rose to 99·2° F. On the 2nd (the third day) he had slight cough. Koplik's spots were present but were not typical; on the 3rd they were distinct. A diagnosis was made and the patient was transferred to the measles ward. On the 4th (the fifth day) the rash developed.

CASE 3.—The patient, a male, aged three years, was admitted for diphtheria. On Dec. 31st the temperature was 102° F. at 11 P.M. On Jan. 3rd (the fourth day) Koplik's spots were present; they were not looked for earlier. A diagnosis was made and the patient was transferred to the measles ward. The catarrh was very slight. On Jan. 4th (the fifth day) the rash developed.

CASE 4.—The patient, a male, aged two years, was admitted for scarlet fever. On Jan. 2nd the temperature was 99° F. On the 4th (the third day) the rash and Koplik's spots were both present. The spots were not looked for earlier.

CASE 5.—The patient, a male, aged one year, was admitted for diphtheria. On Jan. 7th the evening temperature was 101° F. He had a slight cough and had sneezed. On the 9th the temperature was 100·2°. Koplik's spots were present (36 hours from the onset). The catarrh was very slight. A diagnosis was made and the patient was transferred to the measles ward. On the 11th (the fifth day) the rash developed.

CASE 6.—The patient, a male, aged five years, was admitted for scarlet fever. On Jan. 4th he had a slight nasal discharge. On the 7th the temperature was 100° F. On the 8th (the second day) spots were present, within 24 hours of the onset of the pyrexia. There was no catarrh. On the 11th (the fifth day) the rash developed.

CASE 7.—The patient, a female, aged five years, was admitted for diphtheria. On Jan. 10th the temperature was 98·8° F. in the morning and normal in the evening. On the 11th the temperature was 102° in the evening. Koplik's spots were present (second day). On the 12th (the third day) a slight and atypical rash was present. Catarrh was practically absent. On the 13th the rash was characteristic.

CASE 8.—The patient, who was a brother of the patient in Case 7, aged one year, was admitted for diphtheria. He was examined on Jan. 12th in view of the occurrence of the last case. He had very slight cough but no symptoms suggesting measles. The temperature had been 98·8° F. on the 10th but normal before and since. Koplik's spots were found on the 12th. He was isolated in the forenoon with a diagnosis of measles. In the evening the temperature rose to 100°. On the 13th the rash developed.

CASE 9.—The patient, a male, aged three years, was admitted for scarlet fever. On Jan. 17th the temperature was 99·8° F. On the 18th (the second day) spots were present though not well marked. On the 20th (the fourth day) the rash developed. The spots were now well marked.

CASE 10.—The patient, a male, aged two years, was admitted for diphtheria. On Jan. 22nd the temperature at 11 P.M. was 102·8° F. On the 24th (the third day) there were some doubtful spots; the catarrh was slight. On the 25th (the fourth day) the spots were distinct. The patient was transferred to the measles ward. On the 26th the catarrh had increased. Late at night there were doubtful traces of rash. On the next day (the sixth) the rash was characteristic.

CASE 11.—The patient, a male, aged five years, was admitted for scarlet fever. On Jan. 24th the temperature was 100·6° F. On the 25th spots were present at 3 P.M. (24 hours from the onset) but were not well marked. At 11 P.M. they were quite well marked. A diagnosis was made. No catarrh was present. On the 28th (the fifth day) the rash developed.

Three other cases occurred before the above but were diagnosed and isolated without reference to the spots. In these 11 cases, in which the spots were definitely looked for, they were found in all, though in most larger recorded series

there have been exceptions. Unfortunately, in the earlier ones the spots were not looked for sufficiently soon, but in those in which a systematic search was made their appearance was never delayed beyond the third day of pyrexia and occasionally they were seen within twenty-four hours of its onset. The interval from their appearance to that of the rash varied between one and three days. Except in Case 1 the temperature was previously normal or subnormal, so that the onset could be accurately dated. In Case 6 there was slight nasal discharge for three days with normal temperature; in all the others pyrexia was the earliest symptom. Case 8 is specially interesting as it presented no symptoms suggestive of measles and was only examined for the spots on account of the relationship to Case 7. In almost all the cases the prodromal catarrh was very slight, a fact which enhanced the value of the spots. In some of them it is not too much to say that a certain diagnosis was impossible, at that date, apart from their presence. I had not at first the courage to put a child into a ward with other cases of measles on the strength of the spots, with only slight (and in itself insufficient) collateral evidence of infection. Latterly, however, I did so, and in no case did the rash fail to develop. Cases of pyrexia in other conditions, such as serum rash, broncho-pneumonia, and the like, were carefully examined, but only once did I find any condition which could not, with care, be differentiated from the spots. The case was one of diphtheria in which there occurred one evening a temperature of 102° F. with cough. On examination I certainly thought I saw two or three Koplik's spots and had the patient placed in a ward by himself. Next morning, however, there was no trace of the spots nor did they subsequently develop. The cough proved to be the earliest symptom of a severe attack of diphtherial paralysis. It may be said, then, that making allowance for the shortness of the series, it bears out the conclusion of most writers that Koplik's spots are of much value in the early diagnosis of measles. Other symptoms which will usually be present and may even occur before the pyrexia must not be neglected. It is where these other symptoms are slight and inconclusive as in some of the above cases, that the presence of the spots may decide the diagnosis. They are absent in, roughly, 10 per cent. of recorded cases.

Plaistow, E.

A CASE OF RENAL ABNORMALITY.

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BY the courtesy of Dr. E. Rice and Mr. R. H. Luce, under whose care the patient was while in the Derbyshire Royal Infirmary, I am enabled to report what I hope may be considered an interesting abnormality.

A man, aged 34 years, was admitted into the infirmary on May 20th, 1904, with a history of hæmatemesis and he was said to have had some fits the precise nature of which could not be ascertained. There was no history of any renal trouble. He was obviously very ill and died a few hours after admission. No hæmatemesis occurred nor did he have any fits during that time. He was somewhat comatose and there was some bleeding from his gums. His tongue was not bitten.

At the post-mortem examination it was found that there were miliary tubercles along the meningeal blood-vessels, there being fairly large aggregations in some places. They were chiefly on the vertex and comparatively scarce at the base. There was congestion of the blood-vessels of the left occipital lobe. The lateral ventricles were considerably dilated. The upper lobe of the right lung was shrunken and airless, the bronchi being hard and dilated. There were no cavities or scars. The bronchial glands were calcareous. The stomach was distended with fluid but contained no blood. There was congestion of the veins at the cardiac orifice.

The interest of the case consisted in the fact that there was only a single kidney, firmly fixed, situated in the middle line. The upper end just overlapped the bifurcation of the abdominal aorta and the main portion lay between the two common iliac arteries. It rested on the fourth and fifth lumbar vertebræ and the upper segment of the sacrum. It was approximately of the size of a normal kidney, if anything slightly smaller. As I wished to send it intact to the St. Mary's Hospital Museum, London, I did not separate it from the ureter to weigh it. For the same reason I did not cut it and I am indebted to the curator, Dr. J. F. H. Broadbent, for the description of the kidney on section. In shape it was lobulated and broader at the upper end than at the lower. The renal artery came from the right common iliac. On section Dr. Broadbent states that he found a considerable degree of hydronephrosis with chronic thickening of the calices and connective tissue framework with atrophy of kidney tissue of which there was very little remaining. There was a single ureter six inches in length. It rose from the posterior aspect of the kidney low down. Its lumen was very large, averaging three-quarters of an inch. There was a constriction just before it entered the bladder, into which it opened by a single orifice in the middle line. There was no stone found or any reason to believe that the dilatation was other than congenital. The bladder wall was normal. The rectum crossed the single ureter almost at right angles and dipped down into the pelvis on the right side of the bladder—a curious relation, but it did not appear to have exerted pressure on the ureter.

The whole condition is perhaps more interesting from a surgical than from a medical point of view, although it seems extraordinary that the small amount of kidney tissue was sufficient, and should such an abnormality occur in a woman it would be a possible cause of obstructing labour by diminishing the conjugate.

Derby.

AN UNUSUAL CASE OF MUSCULAR ATROPHY.

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THE following case of progressive wasting of the muscles of the shoulder girdle which I have had under observation for two and a half years presents some unusual and interesting features.

The patient first came under my care in November, 1901. He was then 13½ years of age. He was said to have lost power in the left arm at the age of five months. Since that time the left arm had always been smaller than the right but there had been no progress in the wasting till one year ago. One brother had died in an asylum, otherwise there was nothing in the past history or family history bearing on the case. At first sight the diagnosis seemed to lie between old infantile palsy or Erb's juvenile paralysis. The history was untrustworthy, so that it was difficult to estimate how much of the wasting was recent and how much of it was old. But the fact that the left arm, measured from the coracoid process to the styloid process, was an inch shorter than the right showed that some of the wasting must have been of long standing. Yet a response was elicited from all the muscles both to the cell and to the coil currents. This made it look very like a myopathy, but there were two points strongly against this: (1) the affected muscles showed marked fibrillary tremors; and (2) the grouping of the muscles was quite different from that found in the myopathies, as the following table shows:—

Erb's type.		*Present case.*	
Biceps, Triceps, Supinator longus	atrophied.	Deltoid, Supraspinatus, Infraspinatus	Completely atrophied.
Deltoid, Supraspinatus, Infraspinatus	natural.	Biceps, Triceps, Pectorals	Partially gone.
		Supinator longus, natural.	

In all other respects the boy appeared normal and in good general health. In 1902 the right side began to get weak also and fibrillary tremors were noticed on this side. In October, 1902, he was admitted to the National Hospital for the Paralysed and Epileptic, Queen-square, under the care of Sir William Gowers; the registrar has kindly informed me that the opinion formed at that time was that the boy had infantile palsy with doubtful muscular atrophy occurring subsequently. I did not see him again till the end of 1903 when I was struck with the increased loss of power in the

left arm and the wasting of the left hand. It was stated that he had begun to have fits of unconsciousness during which he struggled and occasionally passed urine, but this was never seen during his stay in the Metropolitan Hospital where he was under my care from Feb. 29th to March 21st, 1904. His condition on admission was as follows. He was a healthy looking lad, 16 years old. His arms were very thin, especially the left. On this side the deltoid was almost absent, the head of the humerus, the acromion, and the coracoid process being very distinctly seen. The supraspinous and infraspinous fossæ did not appear to be occupied by any muscle at all. The trapezius was present but not well developed. There was very little of the pectoralis major remaining. The biceps and triceps were much wasted. In all these muscles fibrillary tremors were to be seen. There was no noticeable wasting of the muscles of the forearm. The thenar eminence of the hand was flattened and the interossei appeared to be slightly wasted. Formerly he could raise the left arm above the head without much difficulty; now he had to adopt the following complicated manœuvre. The upper arm was first approximated to the chest and the scapula fixed. The forearm was then flexed and finally the whole arm was raised by simultaneous extension of the forearm and rotation of the shoulder forward. On the right side the supraspinatus, infraspinatus, and deltoid were all slightly wasted and showed fibrillary tremors. The muscles of the abdomen and legs were not wasted. The knee-jerks were normal, there was no spasticity, the gait was not affected, and no disturbance of sensation could be discovered. The electrical reactions tabulated below were very different from those obtained in 1901:—

Left Side.—I. *Responding neither to Coil Current nor to Coil Current.*

	Spinal origin.
Deltoid	4th and 5th C.
Supraspinatus	4th C.
Abductor pollicis	8th C.
Lumbricales	8th C.
Interrossei (except fourth palmar)	1st T.

II.—*Not Responding to Coil Current, Sluggish to Cell Current.*

	Current in milliampères.	Spinal origin.
Fourth palmar interosseous	14	8th C.
Adductor pollicis	13	1st T.
Infraspinatus	12	4th C.
Supinator longus	10	5th C.

III.—*Responding to Coil Current, somewhat Sluggish to Cell Current.*

	Current in milliampères.	Spinal origin.
Pectoralis minor	10	7th C.
Biceps	8	5th and 6th C.
Triceps	8	6th and 7th C.

IV.—*Reacting readily to both Currents.*

	Current in milliampères.	Spinal origin.
Pectoralis major	6	6th and 7th C.
Trapezius	6	2nd and 3rd C.
Extensors and flexors of forearm	6	6th and 7th C.

Right side.—All responded to cell current though the infraspinatus required a current of more than 15 milliampères and all responded to coil current.

That the condition is a progressive one there can now be no doubt. The increased loss of power is well shown by the difficulty experienced now in raising the arm, the increased wasting is seen in the intrinsic muscles of the hands, and the increased degeneration is amply attested by a comparison of the electrical reactions in 1901 and 1904. Old infantile palsy cannot account for these facts, especially as fibrillary tremors can now be seen on the right side. Erb's juvenile type of muscular dystrophy is negatived by the distribution of the wasting and by the disappearance of coil current excitability in certain muscles without loss of cell current excitability. Moreover, fibrillary tremors do not occur in myopathies. There remains the spinal type—chronic anterior poliomyelitis. Looking at the spinal representation of the muscles involved we see that the fourth, fifth, and eighth cervical and first thoracic segments are most affected, while intermediate segments, the sixth and seventh cervical, show less degeneration. And the degeneration in the lowest segments is quite recent. Beevor in Allbutt's "System of Medicine" points out that progressive muscular atrophy begins either at the upper or lower end of the brachial enlargement of the cord, while the part corresponding to the sixth cervical escapes. The grouping, then, of the affected muscles, the total absence of electrical response in some of them, and the reaction of degeneration in others, together with the presence of fibrillary tremors, seem to make it certain that chronic anterior poliomyelitis exists in this case. The history and the defective development of the humerus on the left side point also to an old acute anterior poliomyelitis. But if we take this view there are three unusual features in the case. 1. It is most exceptional for acute anterior poliomyelitis to become chronic. All the damage which is going to be done is usually done at once. And in this case there was an interval of about 12 years before the lesion became progressive. 2. Chronic anterior poliomyelitis is not a disease of youth. Beevor states that it rarely occurs before 25 years of age, though a case has been recorded in a child, aged one and a half years (Thomson and Bruce). 3. Chronic anterior poliomyelitis usually shows itself first in the small muscles of the hand. Here the shoulder girdle was attacked first, though the more ordinary procedure is being followed now, for the intrinsic muscles of the hand are degenerating faster than those affected earlier. Perhaps the previous attack of infantile palsy determined the onset of the progressive muscular atrophy in an area already damaged.

Finsbury-square, E.C.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF "LATENT" PNEUMOTHORAX.

BY RICHARD BEVAN, L.R.C.P. LOND., M.R.C.S. ENG., D.P.H.

THE description of a case of pneumothorax recorded in a recent number of THE LANCET by Mr. E. F. Coghlan[1] has prompted me to put on record the notes of a case of so-called "latent" pneumothorax which recently occurred in my practice and in which the rapidity and completeness of the patient's recovery were as remarkable as they were in the case referred to.

On Sunday, Feb. 28th, 1904, I was sent for to see a young man, aged 24 years, a clerk in an office, who until the previous Friday morning had enjoyed the most robust health. As a proof of this he assured me that although he had been in his present situation for six years he had been absent for one day only during that period on account of sickness and that was for a severe cold in the head. He gave the following history. On Thursday afternoon after finishing his day's work he wished to put away a large pile of heavy ledgers on which he had been working. In height these, when being carried, extended from his chin to the length of his outstretched arms. His usual practice was to get his fingers underneath the pile, to tip them, and to allow them to fall bodily on to his chest. There was no lifting as the ledgers when resting on the desk were on a level with his chest. He had performed the same manœuvre scores of times without ill effects and he at the time felt none on this particular occasion. Being anxious to have some exercise after his day's work he walked from his office home, and no pain or discomfort or difficulty in breathing made its appearance before retiring for the night, except a feeling of extreme coldness. On waking in the morning and endeavouring to get up he experienced much difficulty in breathing, the sensation being, he said, as if one lung was solid and useless. The dyspnœa and distress were much increased later and especially on any movement, yet he determined to go to the office. During the whole day he felt very ill and thought that he had pneumonia or some acute lung trouble. On Saturday he remained at home, any

[1] THE LANCET, April 16th, 1904, p. 1052.

movement causing him extreme breathlessness, but on the other hand while lying flat on his back and remaining quiet he had no pain and the urgency of the breathing was relieved. This made him hope that the attack would pass off. On Sunday, however, I was sent for. He was up when I saw him and his condition was as follows. While he was lying quite still there was not much apparent distress, his respirations being 32 per minute, his pulse 124, and his temperature 97·8° F. He was a healthy-looking young fellow, 5 feet 10½ inches in height, well nourished and muscular, and weighed 11 stones 6 pounds. On examining his chest no movement of the chest walls was observable on the left side and the intercostal spaces were widely distended. On palpation no vocal fremitus could be obtained either in front or behind and the percussion note on that side was so absolutely dull and muffled in tone as to make me at first believe that the left pleural cavity contained fluid. The dull note extended evenly all over the front and back and no heart impulse was anywhere on that side observable. On auscultation no breath sounds or vocal fremitus could be heard at the back or front, but at or about the fifth intercostal space in front there was to be heard on inspiration a peculiar metallic sound which it is difficult to describe accurately, but which resembled in a marked degree the peculiar metallic spring-like noise which is made by my collar stud (which has a moveable head on a spring attachment) when I move my head. This sound, I may here remark, ceased on the third day of my attendance and was, I suppose, due to the escape of a minute bubble of air from the valvular opening in the lung and its bursting in the pleural cavity. On examining the right side of the chest the heart apex was discovered at a point in the fifth interspace about one inch beyond the right border of the sternum. Over and around this position the heart sounds were fairly audible. With this exception the physical signs on the right side were normal, the dividing line between the two pleural cavities being easily mapped out by the percussion note and the presence and absence of vocal resonance. The bruit d'airain was absent. The patient was simply kept quiet in bed for the first fortnight. He had no pain or dyspnœa and he slept and ate well. On the third day of my attendance the extreme distension of the left side had lessened perceptibly and the percussion note for the first time became markedly hyperresonant all over, including, of course, that portion of the left side usually occupied by the heart. From the first he gradually got better; the heart beats lessened in frequency, the tension in the chest lessened, the heart gradually moved over to its proper position, and the breath sounds returned, first at the apex in front and then gradually lower and lower; the difference in the vocal resonance on the two sides became less and less marked as the lung became less compressed by the absorption of the contained air until at the end of eight and a half weeks (April 28th), when I examined him carefully before letting him go for change of air prior to going back to work, no abnormal symptom could be discovered. He never at any time had any cough. His temperature never rose above normal and I was never at any time during the illness able to discover any physical signs of fluid in the pleural cavity. In fact, his recovery was uninterrupted. He returned to work after a fortnight's change well and strong.

With regard to the cause of this accident, although an interval of some hours elapsed between what was the apparent cause and the effects, yet there is no doubt in my mind that the blow or weight on the chest by the ledgers was the direct cause. The leakage of air was so very gradual, the opening being minute and probably valvular, that it is impossible to say at what moment physical signs could have been discovered if they had been looked for. Distress did not arise until compression of the lung had become extreme. It has been argued by the office in which he was insured that he *ought* to have felt the symptoms sooner, but when in bed lying quietly on his back he never during the whole course of his illness had the slightest pain, distress, or dyspnœa, so that physical signs probably existed long before they were apparent to him. With regard to the mode of causation, we have first a deep inspiration filling out the chest cavity to the lung's utmost capacity and closure of the glottis, the lower edge lying between the chest wall behind the sixth rib and the firmly contracted diaphragm. Suddenly the patient has a smart blow from the heap of ledgers falling on to his chest wall, bending in the sixth rib, and possibly nipping or forcibly compressing the edge of the lung and rupturing a minute air vesicle. M. Gosselin even says that the prolonged compression of the over-distended lung will cause it to give way, the glottis being tightly closed. The analogy has been suggested of a bit of the inner tube of a bicycle being accidentally nipped between the wire of the outer casing and the rim of the wheel when not properly returned after mending a puncture, &c., and rupturing the tube directly the rider mounts and puts pressure on the tube. It has been suggested, too, that in most if not all of these cases of pneumothorax occurring in the apparently healthy some previous disease, probably tuberculous softening, has conduced to bring about the result. Here we have no family or previous personal history which would lead one to suspect it, and the complete recovery of the patient tends to nullify any such supposition; besides which the history of the accident would to my mind be quite sufficient to account for the damage to the lung without there being any necessary previous disease, while finally the absence of any effusion or pleurisy tends to confirm my contention of its absence.

West Kensington, W.

PTOMAINE POISONING FOLLOWED BY DESQUAMATION.

By PERCY T. GOODMAN, L.S.A. LOND.

On May 20th, 1904, I was called in the early morning to a family of seven persons who had all partaken of a fish supper on the previous evening. They were in a state of collapse, with pallid faces, clammy perspiration, and cold extremities, and were complaining of severe abdominal pain and vomiting. In two cases diarrhœa was present with very offensive stools. There was no urticaria or rash of any description. None of the family had any rise of temperature or sore-throat. Warmth was applied to the extremities and a purgative was given followed by stimulants (ammonia and ether). All the patients recovered and I saw nothing more of them until June 1st when the mother brought one of her boys to me on account of his school teacher having sent him home because of the condition of his hands and feet from which the skin was coming off, chiefly on the palmar surface, in large flakes. The mother also had some slight desquamation on the forearms. I went to the house and saw the other children whose ages ranged between seven and 16 years, all of whom had the same curious desquamation on the palms of the hands and the soles of the feet. The father alone was not affected in this manner.

I have heard of one other similar case which occurred in the practice of my friend Dr. J. Snowman of Brondesbury, but I do not remember having anywhere read an account of this remarkable condition after food poisoning. The points of interest in these cases lie in their strong resemblance to post-scarlatinal desquamation and in the fact that six of the seven persons who suffered from ptomaine poisoning developed this unusual sequela.

Spitalfields, E.

SEQUEL TO A CASE OF INOPERABLE CANCER TREATED BY OÖPHORECTOMY.

By WALTER EDMUNDS, F.R.C.S. ENG.,
SURGEON TO THE TOTTENHAM HOSPITAL.

In THE LANCET of March 29th, 1902, at p. 888 is recorded a case of scirrhus of the breast in which symptoms of intrathoracic growth appeared five years after amputation. There was also a recurrence in the remaining breast. Oöphorectomy and thyroid feeding were had recourse to, with the result that at the time of the report, a year after the operation, the patient was much better. The tumour in the breast and axillary glands had almost disappeared and the dyspnœa, too, had nearly gone. The further history of the case is that nine months later the patient was not so well: the tumour in the breast had somewhat increased and was commencing to involve the skin; the dyspnœa, too, was somewhat worse. Three months later the skin over the tumour had ulcerated and on this account it was thought advisable to amputate the breast. Unfortunately the patient died from heart failure while under the anæsthetic. An

account of this part of the case has already been placed on record by the anæsthetist.[1]

A post-mortem examination was made by Dr. L. Freyberger at which he invited me to be present. The right breast was as described; there were also enlarged glands in the axilla and recently infiltrated glands in the flank. At the bifurcation of the trachea was a mass of secondary growth involving the roots of the lungs. The left lung was bound to the chest wall by old adhesions, the aorta was atheromatous, and the heart had undergone some fatty degeneration. Although the oöphorectomy did not save the patient's life it produced for a time great benefit; the tumour in the remaining breast almost disappeared, while the small growth behind the ear did completely disappear; the symptoms due to the intrathoracic growth were also greatly relieved. In this case then, as in many others, much good was done by the operation. In conclusion, it may be pointed out that any theory as to the pathology of cancer must explain the improvement effected by oöphorectomy in recurrent scirrhus of the breast.

Devonshire-place, W.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

GREAT NORTHERN CENTRAL HOSPITAL.

A CASE OF SARCOMA OF THE PLEURA AND LUNG WITH CONSECUTIVE PERICARDITIS AND GROWTH IN BRAIN AND PANCREAS, PRESENTING UNUSUAL CLINICAL FEATURES.

(Under the care of Dr. H. W. SYERS.)

THE patient, a man, aged 31 years, married, was admitted into the Great Northern Central Hospital on Sept. 3rd, 1903, complaining of pain in the abdomen, headache, and malaise. He was in his usual health until the last week of the previous April, when he complained of feeling giddy from time to time. On May 14th he fell a distance of four feet on to a mound of soft earth. From this time onwards he complained of headache, backache, and of pain over the upper portion of the abdomen. At the beginning of June he first noticed that his eyesight was not so good as formerly and on several occasions he "saw double." At the same time some slight swelling of the face was noticed. There had been no swelling of the lower extremities or under the eyes; no vomiting, shortness of breath, cough, or jaundice had been complained of. Seven years before the patient suffered from rheumatism but the illness did not seem to have been serious. One and a half years before admission he had an attack of pleurisy affecting the left side, but was in bed one day only. There was no history of "fits" and none of alcoholism. Apart from the maladies mentioned he always appeared to have had very good health and there was no history of syphilis. The family history was unimportant. The patient was thin and rather pale. He complained of headache, not localised, and of failing eyesight, together with more or less generalised and indefinite pain, which was not, however, severe. The temperature was normal, the pulse was 96, and the respirations were 24; the tongue was clean. The lungs were healthy, except that at the left base there was dulness on percussion, extending nearly to the angle of the left scapula, and over the dull area the breath sounds were very feebly audible. The vocal resonance and vocal fremitus were both greatly diminished. In fact, there were the ordinary signs of a moderate pleural effusion at the left base. No adventitious sound could be detected in this locality. The heart was acting in an extremely forcible manner, so much so that the heart impulse, which was greatly diffused, could be seen at some distance from the bed and this even when the bedclothes were stretched over the chest as the impulse was sufficiently vigorous to raise them. The maximum impulse was in the fifth interspace and in the nipple line. No thrill could be detected on palpation. There was no murmur at the apex, but a rough systolic murmur could be detected at the second left interspace close to the sternum. The carotids did not pulsate unduly. Examination of the abdomen, and more especially of the epigastric region, revealed nothing abnormal. There was no paralysis, either general or special. Both knee-jerks were absent. A flexor plantar reflex could be obtained. There was no anæsthesia anywhere. The gait was somewhat unsteady and when he stood with eyes closed and feet together he began at once to stagger. There was slight undue prominence of the right eye but it was not certain that this had not always been the case. The pupils were equal and acted both to light and accommodation. There was no special peculiarity as regards speech. Most marked double optic neuritis was present, the lesion being especially prominent on the left side. The urine had a specific gravity of 1010; it was acid and contained neither albumin nor sugar.

On Sept. 8th it was reported that the patient had been restless and uneasy, especially at night. At times he seemed to lose consciousness momentarily and occasionally for longer periods. While unconscious he fell out of bed on two occasions. There was complete control of the sphincters. The violent action of the heart continued and was indeed more marked; the pulse-rate varied from 80 to 90. There were no fresh physical signs on auscultation either of the heart or lungs. On the 9th the condition was unchanged, except that the patient was less restless. The tendency to lose himself mentally was less marked. On the 14th a loud, harsh, pericardial friction sound was detected, loudest at the base and down the right margin of the sternum. There was no pain in the præcordial region and the temperature remained practically normal. On the 15th there was very obvious pericarditis; the apex beat was felt in the fifth interspace, half an inch internal to the nipple; it was diffuse and very forcible, raising the chest wall. No thrill could be detected. The dulness at the base of the left lung had now become absolute, and over this area the heart sounds were heard with unnatural clearness. The breath sounds were now completely absent over the dull area which extended upwards almost to the root of the lungs. The knee-jerks were still absent and irritation of the soles of the feet caused no extension of the toes. There was no paralysis or even paresis and no anæsthesia could be made out. The pupils remained equal and active both to light and accommodation.

The patient's mental condition now showed a change. He had been throughout rather silent and indifferent as to his condition, but by this time, although perfectly intelligent and readily responding when spoken to, he manifested a marked loss of initiative. He never asked for anything, showed no likes or dislikes, and made no complaint of any kind. He was not dull or lethargic, for when addressed he invariably answered clearly and to the point. The optic neuritis was, if anything, still more marked but he could see to read, though he never read a book or a paper voluntarily, remaining perfectly quiet in one position for hours together. On Sept. 19th it was noticed that the right eye was slightly more prominent than the left. The pericarditis persisted, the double friction sound being very well marked; the cardiac dulness now extended to the right border of the sternum. Nothing abnormal could be detected on examination of the abdomen, but during the next few days there were some pain after eating and flatulent distension. On the 24th he complained of severe pain in the upper portion of the abdomen, the pain extending through to the back. The pain prevented him lying down in an easy posture. He was now getting thin and the expression was worn and anxious. On the 28th the abdominal pain continued. The dulness over the left base was now increasing both vertically and towards the lateral region. On this day and on a previous occasion an exploring needle was passed into the area of dulness but neither fluid nor pus was withdrawn. On the second occasion some bright red blood entered the cavity of the syringe, but a small quantity only. On the 29th the cardiac dulness was increased in all directions, extending upwards to the left clavicle and one and a half inches beyond the right border of the sternum, and at the same time the friction sound disappeared, except at the left base,

[1] Transactions of the Society of Anæsthetists, vol. vi., p. 66, 1903.

where it was faintly audible. The excessive activity of cardiac action vanished with the full evolution of the pericardial inflammation, and with the onset of fluid effusion the apex beat became invisible and could not be located by palpation.

In the course of the next six days the effusion was absorbed, the apex again becoming visible and palpable and the double friction sound returning over the whole præcordial region. During the same period, too, the dulness over the back of the left side of the chest greatly increased, nearly attaining the apex of the lung.

The patient was now losing flesh rapidly and had much gastric pain, worse after eating. At the beginning of October a mass could be felt in the epigastric and left hypochondriac region, the tumour being of about the size of an orange and very firm on pressure. The edge of the liver could be felt below the right costal margin and the left lobe could also be made out lying above the mass just referred to. The temperature now became subnormal and remained so until the end. Rapid emaciation set in but the pain in the epigastrium and the occasional sickness from which he had suffered disappeared. The emaciation progressed and death ensued from asthenia on Oct. 10th. The same mental condition continued until the last, the patient being calm, placid, and altogether lacking in initiative throughout. There was practically but little evidence of lung trouble during the whole course of the illness. In the earlier stages there were occasional cough and expectoration; the latter contained no tubercle bacilli. There was no hæmoptysis at any period of the illness.

Necropsy.—The post-mortem examination was made the day after death. Rigor mortis had passed off. The body was extremely emaciated. A large, very hard mass could be felt through the abdominal wall in the epigastric and left hypochondriac regions. On opening the cavity of the thorax the left lung was found to be strongly adherent to the parietes over its lower lobe, so that some force was required in order to remove the organ and fragments of the lung were left adhering to the chest wall. There was a similar firm adhesion to the diaphragm on the part of the same lung. It was found on examination that the left lung was the seat of a new growth which also involved both the parietal and visceral pleura adjacent to the organ. The left lower lobe was almost entirely replaced by the new growth, which also involved the upper lobe nearly to the apex on the left side. On section the growth was found to be firm in consistence and of a yellowish-white colour. It had thickened the pleura to the extent of half an inch. The posterior mediastinum was full of the growth which had extended forwards towards the heart; it had attacked both the pericardium and muscular wall of this organ. The posterior portion and a large extent of the anterior surface of the pericardium were infiltrated with the growth and elsewhere there were the usual appearances indicative of acute pericarditis—much roughened lymph and loss of polish of the serous membrane. There was scarcely any fluid in the pericardial cavity, the pericarditis evidently being in an advanced stage of retrogression. The wall of the left auricle was practically replaced by new growth, for the muscular fibres were almost entirely destroyed by the malignant invasion. The wall of the left ventricle was also infiltrated but its muscle was fairly sound. The valves were healthy. In the upper portion of the abdominal cavity a mass was found as large as the closed fist. This was found to consist of the pancreas and neighbouring lymphatic glands. The head and two-thirds of the body of the pancreas were infiltrated with a new growth similar to that which was present in the left lung. The glands were enlarged and full of the same new growth. No other abnormalities were found as regards the abdominal cavity. The right cerebral hemisphere was the seat of new growth. This was situated in the corona radiata in the posterior portion of this structure but entirely removed from the motor tract. The mass was of the size of an orange, almost circular in outline, and soft in consistence. Its edge was well defined from the surrounding healthy white substance. The growth did not involve the grey matter of the cortex or the basal ganglia.

Microscopic examination of the new growth proved it to be a round-celled sarcoma with a few spindle-celled elements.

Remarks by Dr. SYERS.—The points of interest in this case concern the pulmonary symptoms, the physical signs at the earliest stage of pericardial involvement, the mental condition, and the locality in which the new growth originated.

First as regards the pulmonary symptoms. Although the physical signs of lung affection were so marked hardly any symptoms accompanied them. Occasionally there was complaint of cough but this was never troublesome or of long duration. Expectoration was trifling in amount and there was no hæmoptysis. It is certainly remarkable that with such extensive involvement of the lung little or no symptomatic evidence of the disease—cough, fœtid expectoration, hæmoptysis—should have been present. Pain in the chest was never a prominent symptom, and was, indeed, hardly mentioned.

A few days after admission the excessive over-action of the heart became extremely obvious; it increased from the time of admission although the patient was quietly resting in bed. As mentioned in the history of the case, the action was so violent that the elevation of the bedclothes was obvious to the bystander. At this time there was no friction sound to be heard and it was not possible satisfactorily to account for the extraordinary energy of cardiac action. It was thought that the undue extent occupied by the apex beat and the over-action of the heart generally might be the result of pressure from behind, and to a certain extent this explanation is justified by the post-mortem findings as the heart was certainly projected forwards by the malignant disease which involved the left lung. But there can be little doubt that the most efficient cause of the cardiac excitement was the commencing involvement of the pericardium and of the muscular wall of the organ in the new growth. It would seem that the heart by every means in its power resisted the insidious approach of the malignant invasion which, however, only too rapidly gained the mastery. When the heart was surrounded with new growth and infiltrated with it the excessive activity of the organ ceased, and with the onset of abundant pericardial effusion its action became distinctly weak.

It is seldom that the opportunity occurs of watching the very earliest onset of a malignant pericarditis and carditis, and it is therefore of interest to note the extraordinary irritability which the heart displayed at the commencement of such an invasion of a previously healthy organ, but not until several days after the phenomena had been in existence was the first very faint pericardial friction sound audible.

The mental condition of the patient was interesting throughout. During the first few days after admission he was somewhat restless, sleepless, and excitable, occasionally getting out of bed and being inclined to walk about the ward. But very soon this excitable state ceased and he gradually passed into an apathetic condition, though perfectly cognisant of all that was passing. He retained his intelligence, knew his wife and friends, and did not seem to have lost his memory, yet he manifested not the slightest power of initiative, never asked for anything, never complained or grumbled, and always responded when spoken to quite clearly and intelligently. He was most amenable in every way and yet there was obviously some great mental change which can be best described as consisting in an entire want of the power of initiative.

At no period of the illness was there any paralysis, either hemiplegic, paraplegic, or local. And so far as could be made out there was no loss of sensation, either general or special, except as regards eyesight, which was distinctly defective. The patient was in no sense emotional. There was no attack of convulsions or of loss of consciousness except on the one or two occasions referred to in the history.

Lastly, as regards the locality in which the new growth originated. There can be little doubt that the point of origin of the sarcomatous growth was the left pleura and lung, and that the involvement of the pancreas was secondary. Clinically, at all events, the case was one of pulmonary malignant disease, for the physical signs were perfectly obvious in the left chest when the patient was admitted, at a period when physical examination of the abdomen gave completely negative results. It was only after he had been nearly a month in hospital that a distinct tumour in the epigastric region was detected, although for some short time previously there had been complaint of pain after eating. Sickness was only occasional but the pain was severe and it was necessary to resort to rectal feeding for some days.

Sarcoma of the pancreas is far from common and it certainly seems that the pancreatic involvement was secondary, and this both on clinical grounds as well as from

the doctrine of chances. Infection of the pancreas and glands took place no doubt through the diaphragm which was practically the only barrier between the growth in the lung and the abdominal structures which were affected. As regards the cause of the malady the history is as usual silent, for it is tolerably certain that the slight fall which took place shortly before the illness commenced can in no sense be looked upon as in any way connected with the occurrence of the disease.

To Mr. G. A. Upcott-Gill and Mr. A. de Morgan, house physicians, my thanks are due for the notes of this case, and I am indebted to Mr. Allan Hair, pathologist to the hospital, for the microscopical examination of the growth.

ROYAL DEVON AND EXETER HOSPITAL, EXETER.

TWO CASES OF ACTINOMYCOSIS.

(Under the care of Mr. C. E. BELL and Mr. J. D. HARRIS.)

FOR the notes of the cases we are indebted to Mr. P. H. Stirk, house surgeon.

CASE 1.—The patient, a fisherman, aged 38 years, was admitted under the care of Mr. C. E. Bell to the Royal Devon and Exeter Hospital on Jan. 15th, 1903. Two months before admission the patient was taken suddenly ill with pain in the bowels. He vomited and was unable to pass anything by the bowel for two days; then his bowels acted and he was somewhat relieved. The medical man who attended told him that he had appendicitis. He was fed upon nothing but milk and kept in bed for thirteen days. Since then he had had an abdominal swelling, which he thought varied somewhat in size from time to time, but was at the time of admission larger than it had ever been. He had no pain or trouble with his bowels after the first attack.

On admission, the patient was found to be emaciated and very weak with a temperature of 101° F. There was a large red, slightly œdematous swelling in the abdominal wall situated below the umbilicus and extending downwards to the pubes and a little to the right of the middle line. It was hard, not tender or painful, and dull to percussion. It not only involved the abdominal wall but seemed to go deep into the peritoneal cavity. On inquiry the patient was of opinion that the abdominal wall had only been involved for the last month. There was no evidence of disease in the respiratory, cardiac, or genito-urinary systems.

The progress of the case was as follows. Four days after admission the skin was more red than on admission and at one point immediately below the umbilicus there was a soft, fluctuating patch. This was opened and about an ounce of pus was evacuated which contained the characteristic granules in large numbers. These when stained showed large quantities of the streptothrix but no clubs. 15 grains daily of iodide of potassium were given and later increased to half a drachm daily. He seemed to improve locally and in general health. The swelling was opened in several places and similar material was obtained. Inoculation of nutrient gelatin resulted in a growth of staphylococci, streptococci, and a bacillus resembling the bacillus coli communis; there was no growth of actinomycosis. Five months after admission the patient had so much improved that he insisted on being made an out-patient. He was then able to get about, the swelling had much diminished, his temperature had been quite normal for a month, and he had gained flesh although he was still very emaciated. The patient lived many miles from the hospital and in consequence attended very irregularly. After two months he developed a cough with expectoration and was unable to go to the hospital. He was then attended locally and judging from information kindly given by his medical attendant there is little doubt that he died from extension of the disease to his lung ten months after the commencement of the illness, but no post-mortem examination was made.

CASE 2.—The patient, a female domestic servant, aged 28 years, was admitted under the care of Mr. J. D. Harris to the Royal Devon and Exeter Hospital in July, 1902. She had always had good health with the exception of one illness ten years before admission for which she was treated at this hospital; reference to the old notes of her case showed that she was an in-patient suffering from strumous glands in her neck and also consolidation and râles at the right apex. The course of her temperature at that time was also suggestive of tuberculous trouble. The family history was good. With regard to the history of her present illness, four months before admission the patient said she suffered very much from toothache in the left lower jaw and she had several decayed teeth removed. At that time there was no swelling but after the extraction an abscess formed and was opened, and since then the swelling had gradually formed.

On admission the patient was found to be anæmic but well nourished. There was a swelling on the left side of the lower maxilla extending from the angle of the jaw to the middle line; it extended upwards over the lower part of the face and downwards over the upper part of the neck; as a whole, it was deep red in colour, with patches of dark purple which were soft, fluctuating, and tender. Apart from these patches the tumour was very hard and painless on manipulation; the edges were abrupt and well defined; the teeth could only be separated about a quarter of an inch so that it was impossible to examine the mouth. There was no evidence of disease in the respiratory or digestive systems. Several of the fluctuating spots were opened and a small quantity of thick purulent material was obtained. This contained granules which when stained by Gram's method showed abundance of the streptothrix actinomyces but no clubs.

The progress of the case was as follows. The patient was put on 15 grains of iodide of potassium per diem, subsequently increased to two drachms, and the tumour soon became smaller. Several fluctuating spots formed and were dealt with by incision. The iodide of potassium was taken until June, 1903, when she was discharged cured, the tumour having disappeared and its site being occupied by healthy scar tissue. (Mr. Harris heard from the patient during the month of February, 1904, that she was quite well and had taken a situation in London.)

Remarks by Mr. STIRK.—As recently as 1891 Professor E. M. Crookshank[1] is reported to have said that actinomycosis was undoubtedly found in man but was not of sufficient frequency to make it an important disease. Since then so many cases have been reported, both in this country and particularly abroad, that one is forced to conclude either that the disease formerly was generally unrecognised or that it has become much more frequent. Probably the apparent increase is due to improved diagnostic methods. Case 1 is of special interest as showing how this form of the disease may resemble appendicitis; similar cases have been recorded by Ransom,[2] Kern,[3] Fairweather,[4] and others. In a thesis published in 1897 Honglais collected 120 cases of appendicular actinomycosis. In this case the chief points which made one suspect that it was not an ordinary case of appendix abscess were the absence of pain and tenderness, the length of the history, and the absence of such grave constitutional symptoms as one is accustomed to see in appendicitis. Dr. Grill[5] of Tübingen, in an analysis of 107 cases collected from the literature, finds that abdominal actinomycosis is most frequent next to that of the head and neck; the ileo-cæcal valve is the part most often affected, and the disease not infrequently resembles appendicitis. The prognosis is best in those cases in which the abdominal wall is involved early and the viscera are not extensively diseased. In 77 cases of abdominal actinomycosis 45 died, 22 were cured, and ten improved. Vander Veer and Elting[6] say that 50 per cent. of abdominal cases occur in the cæcum or appendix. Heinzelmann[7] reports 11 cases with three cures. Of 12 abdominal cases I have been able to collect from recent literature nine died, one was cured, and two are reported as in good general health but still under treatment.

Case 2 is of interest as showing the possibility of the fungus having obtained admission through the carious teeth or the wounds resulting from their extraction and also from the apparently beneficial results from the administration of iodide of potassium. A report of experiments made at Chicago in the treatment of cattle suffering from actinomycosis gives 63 per cent. of cures effected by the drug but in human actinomycosis it does not appear to be so successful. The

[1] Report of International Congress of Hygiene and Demography in London, Brit. Med. Jour., August 22nd, 1891.
[2] Brit. Med. Jour., Nov. 14th, 1891.
[3] Correspondenzblatt für Schweizer Aerzte, Sept. 15th, 1891.
[4] Brit. Med Jour., Jan. 27th, 1896.
[5] Beiträge zur Klinischen Chirurgie, Band xiii., Heft 2, 1896.
[6] Albany Medical Annual, January, 1902.
[7] Beiträge zur Klinischen Chirurgie, Band xxxix., Heft 2.

manner in which it acts is not certain. That it has no direct action on the fungus itself is probable because a solution of iodide of potassium added to nutrient media is said to have no influence on the growth of the fungus and how much its action is modified by the presence of secondary infection is also uncertain. Reports of human actinomycosis treated by iodide of potassium differ very much in results; in some it has had most marked curative effect and in other cases it is reported to have had practically no influence. It would appear to be of most value in cases of probably pure actinomycosis unassociated with secondary infections. The treatment most likely to be successful is early operation where possible, together with the iodide given internally in very large doses.

Medical Societies.

OBSTETRICAL SOCIETY OF LONDON.

Exhibition of Specimens.—Hydatid Disease in the Abdomen and Pelvis.

A MEETING of this society was held on June 1st, Dr. EDWARD MALINS, the President, being in the chair.

Dr. C. H. J. LOCKYER showed a specimen of Primary Carcinoma of Both Ovaries removed by operation from a woman, 47 years of age. Both Fallopian tubes, though apparently normal, under the microscope were found to be infiltrated with cancer elements. On this account Dr. Lockyer suggested that in similar cases the tubes, even though apparently healthy, should be removed along with the ovaries.—Dr. MARY THORNE described a case in which the left ovary was removed by operation in a patient, aged 46 years, the other ovary at the time of the operation being apparently healthy. The patient died four months later, when a deposit was found in the right ovary; the ileum had been implicated by recurrence at the original site of operation and secondary nodules had formed in the liver.

Dr. HERBERT R. SPENCER showed a specimen of Cancer of the Body of the Uterus occurring in a woman, aged 36 years.

Dr. T. W. EDEN recorded a case of Primary Hydatid Disease (Echinococcus) of the Fallopian Tube. The patient was a woman, 40 years of age, who had been married for 13 years, had never been pregnant, and presented herself at the Chelsea Hospital for Women in July, 1903, complaining of pain in the back and left side. On examination a small pelvic tumour was found in the pouch of Douglas which from its position and characters was thought to be a dermoid cyst of the right ovary. Operation was performed on Sept. 10th, when the tumour was found to be the distended and densely adherent right Fallopian tube filled with detached hydatid vesicles. The ovary was quite separate and unaffected except by adhesions. The tube and ovary of the left side were adherent but otherwise unaffected. There was no trace of hydatid disease elsewhere. The patient made a good recovery. Dr. Eden believed that only one other case of primary hydatid disease of the Fallopian tube was on record—namely, the one described by Doléris in 1896. With regard to the ovary, he believed that only one case of primary hydatid disease of that organ had been recorded—namely, the one described by Péan in 1895. Pelvic hydatids usually began in the peritoneum or connective tissue.

Dr. C. J. CULLINGWORTH and Mr. H. H. CLUTTON contributed a paper giving an account of Hydatids in various parts of the Abdomen of a patient who had been under their joint care from time to time during the last eight years. She first came under observation in the summer of 1896, when 24 years of age, with a rounded, fixed, fluctuating swelling in the suprapubic region which was thought to be a cystic tumour of the ovary or of the broad ligament. At the operation there were found hydatid cysts of both ovaries and of the right broad ligament and, in addition to those, hydatid cysts of the omentum, mesentery, and anterior abdominal wall. A larger cyst was also observed in the right loin and a second one beneath the lower end of the sternum. The cysts connected with the ovaries and the broad ligament and as many as possible of the omental cysts were removed. The operation lasted two and a half hours and the patient's condition towards the end became extremely alarming. Three months later, in October, 1896, Mr. Clutton made an incision above the umbilicus with a view to deal with the remaining cysts. He found three large and several smaller cysts attached to the liver. All except two were removed entire; the ectocystic walls of the two largest were reduced in size and attached to the abdominal incision. The shock of the operation was extreme. Another large cyst felt towards the spleen had to be left for a subsequent operation. In November of the same year a large cyst in the left iliac fossa was evacuated and a week later a suppurating hydatid cyst discharged its contents per rectum. Between this time and December, 1903, the patient was operated upon on eight different occasions at varying intervals, the longest one being two years. Once the operation consisted in evacuation of a large hydatid cyst in the pelvis by means of an incision through the vaginal roof. The other severe operations were performed through the anterior abdominal wall, several of them without opening the peritoneal cavity. The various operations were briefly described. Dr. Cullingworth and Mr. Clutton could not, of course, say that the patient would have no further development of hydatid cysts, but as the case had now extended over a period of eight years they thought the present a good opportunity to place on record the history of the case up to the present time.—The PRESIDENT said that in the case narrated by Dr. Cullingworth it was difficult which to admire most—the persistence of the surgeons or the fortitude and endurance of the patient. The success ultimately attained justified the repetition of the operation and the wisdom in dealing with the recurrences.—Mr. CLUTTON said that the patient owed her present satisfactory condition to the fact that, contrary to the usual experience, the development of hydatid cysts had in her case been hitherto limited to the abdomen. Had the disease affected the thorax or the brain, as so often happened, the result might have been very different.—Mr. J. BLAND SUTTON suggested that Dr. Cullingworth's specimen should be re-examined to determine whether the colony really arose in the ovary or in the connective tissue of the broad ligament and as it increased in size flattened the ovary over its periphery. In the distribution of echinococcus colonies among the abdominal viscera the parasite in the great majority of instances really selected the subserous tissue. This was true of the kidney where they flourished in the connective tissue of the renal sinus, the bowel, the broad ligament, the omentum, and the rectum. The immunity of the ovary depended on the fact that it lacked a loose serous investment and this was also true of the testis which seemed equally immune with the ovary to these parasites. The loose connective tissue of the mesosalpinx and the adjacent portion of the broad ligament formed admirable environments for the maturation of the embryo of tænia echinococcus but was not quite so accessible as the loose connective tissue of the mesocolon, the mesorectum, or the omentum. The multiplicity of lesions depended on the number of ova swallowed; the extraordinary number of cysts in some patients would suggest the probability that occasionally an entire proglottis had been ingested. It seemed also certain that the brood-cysts might be sown into the connective tissue of the wounds made for their removal, a view supported by the frequency with which echinococcus cysts grew in the cicatrices of operation wounds made for the removal of primary colonies. Of this Mr. Bland-Sutton had observed several cases in his own practice.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

Delayed Chloroform Poisoning.

A SPECIAL meeting of this society was held on May 20th at Chandos-street, W., Mr. W. WATSON CHEYNE being in the chair.

Mr. HAROLD J. STILES (Edinburgh) and Dr. STUART MCDONALD (Edinburgh) contributed a paper on Delayed Chloroform Poisoning. Mr. Stiles, in his introductory remarks on behalf of himself and Dr. McDonald, said that although the occurrence of delayed chloroform poisoning had long been recognised in Germany Dr. Leonard G. Guthrie, a fellow member of the society, was the first to direct attention to the subject in this country. His first paper, published in THE LANCET,[1] was entitled "Some Fatal

[1] THE LANCET, Jan. 27th (p. 193) and Feb. 3rd (p. 257), 1894.

After-Effects of Chloroform on Children." In a second paper published in the same journal[1] Dr. Guthrie brought forward further observations in support of his contention that the fatty changes met with in delayed chloroform poisoning were not due to the action of chloroform alone; he maintained that the liver was in an advanced state of fattiness previously to the administration of the chloroform and that the latter, by diminishing oxidation, already deficient, determined the state of functional inadequacy which set up an auto-intoxication due to the accumulation of ptomaines or toxins. Mr. Stiles then described the clinical history and pathological changes in two children who died, the one three days after operation for the radical cure of hernia and the other 26 hours after an osteotomy for knock-knee. It was shown that death could not have resulted from carbolic acid poisoning, from fat embolism, or from sepsis. In the osteotomy case the fat emboli in the lungs were only present in the smallest vessels and were so scarce that death could not be attributed to them. It was interesting to note that some of the sub-lobular and hepatic veins contained a considerable amount of oil, for the most part in free droplets, but occasionally in the interior of what were evidently disintegrated liver cells. No fat was demonstrated in branches of the hepatic artery, nor could any be discovered on the aortic side of the circulation. It was evident, therefore, that the fat in the lungs was derived from that which had gained access into the hepatic veins from the disintegrated liver cells. The possibility of sepsis was carefully considered. Lantern slides and microscopical specimens (obtained from a child who died from a gangrenous inflammation of the œsophagus following operation for perityphlitis) were demonstrated to show how closely the degenerative changes in the liver, kidneys, and heart resembled those which are said to be characteristic of delayed chloroform poisoning. In neither condition were there any inflammatory changes in the glomeruli. The fact was emphasised that the same degenerative changes were sometimes present in patients who had died after operations for septic conditions, especially of abdominal origin, as were found in patients who had died from delayed chloroform poisoning uncomplicated with sepsis. The hope was expressed that pathologists would inquire more closely into the nature and causation of the degenerative changes to be found in the above-mentioned organs in surgical cases. Unfortunately the pathology and symptoms of delayed chloroform poisoning had up to recently been either overlooked or wrongly interpreted, so that the mortality could not be estimated until the condition had become generally recognised by surgeons and pathologists. With one exception the cases recorded in this country had all occurred in children while under treatment either in the Paddington-green Children's Hospital or in the Edinburgh Royal Hospital for Sick Children, these being two hospitals where special attention had been directed to the condition. In Germany, on the other hand, almost all the reported cases had been in adults and the greater proportion of these had occurred after a somewhat severe operation for infective abdominal conditions such as suppurative salpingitis, appendicitis, &c. The element of sepsis with which these cases were complicated rendered it difficult, in the present state of their knowledge, to say how far they helped to solve the problem of delayed chloroform poisoning. If it could be shown that the critical condition (persistent vomiting of a more or less hæmorrhagic type; small, rapid, and often irregular pulse; extreme restlessness, collapse, &c.) in which they occasionally found patients 48 hours or so after operation was in any way brought about by degenerative changes set up by the chloroform the question of substituting ether would have to be considered seriously even in the case of children. Unfortunately, however, the mortality in children from the effects of ether on the respiratory tract would probably be as great as, if not greater than, that due to the after-action of chloroform. It was not thought that Dr. Guthrie had brought forward sufficient evidence to show that the fatty change here described was the essential predisposing factor and that the chloroform merely acted as the "last straw." It was thought much more probable that the fatty change was entirely due to the chloroform acting on a previously healthy liver; indeed, experimental evidence seemed to give strong support to this possibility. Moreover, while the changes in the liver were so striking it must not be forgotten that other organs gave evidence of a general toxic poisoning, and it seemed hardly justifiable, therefore, to attribute the fatal result to hepatic insufficiency. Fatal cases of delayed chloroform poisoning were undoubtedly very rare and it would appear, therefore, that idiosyncrasy was the main factor in their causation just as it was in the irreducible minimum of deaths which occurred during chloroform anæsthesia. As regards the treatment of delayed chloroform poisoning Mr. Stiles and Dr. McDonald entirely agreed with Dr. Guthrie in strongly condemning the use of morphine. Rectal and subcutaneous injections of normal saline solution and if necessary intravenous injections must be employed. If the vomiting were copious the stomach should be washed out and an endeavour should be made to get it to retain some calomel or grey powder. Cardiac stimulants must be used but in moderation.

[1] THE LANCET, July 4th, 1903, p. 10.

Mr. WATSON CHEYNE said that he was still not quite convinced that the chloroform was the only causative factor in these cases and that they must be looked on as after-effects of the administration of that anæsthetic. Although he had had two or three cases at Paddington-green Children's Hospital he thought it was very remarkable that he had never met with similar occurrences either at King's College Hospital or in private practice. The extremely short administration in some of the cases—for example, tenotomy—and the minute dose administered made it very difficult to believe that the chloroform was the cause of the fatal result.

Dr. LEONARD GUTHRIE thought that the frequency of these fatalities following operations under chloroform upon children might be greater than was indicated by the number of cases recorded in this country. Ten years previously he had published in THE LANCET a series of ten cases, nine of which had happened at the Children's Hospital, Paddington-green. Since then three more had occurred at the same institution. He doubted whether such experience was unique. Possibly a search in the archives of other children's hospitals might reveal more cases of a similar nature. The case against chloroform was that prolonged and repeated inhalation of that anæsthetic produced in animals profound fatty changes, not only in the liver but in the kidneys and other organs, and that such changes were almost constantly found in children dying in the manner described after operations under chloroform. But on the other hand it was difficult to conceive that such extreme fatty changes could be induced by the small amounts of chloroform absorbed during a period of anæsthesia which in some cases did not exceed a quarter of an hour or 20 minutes. Hence he inclined to the view that a fatty condition of the liver was pre-existent at the time of operation in such cases, that chloroform by its deoxidising powers aggravated and intensified the fatty changes present, and thus rendered the liver incapable of dealing with toxins entering the portal system from the intestines. The result was that such toxins passed into the general circulation and could not be eliminated on account of the specific action of the chloroform on the kidneys. The rôle of the chloroform was therefore that of the "last straw." The existence of such fatty livers might be suspected though it could not be proved by the history of so-called "bilious attacks" characterised by vomiting, headache, epigastric pain, diarrhœa, or constipation associated with the odour of acetone in the breath and urine. When such a history was obtained ether should be the anæsthetic used, as experiments on animals showed that ether possessed the power of inducing fatty changes to a far less extent than chloroform.

Dr. F. W. HEWITT had never seen any cases at all comparable to these. He supported Dr. Guthrie's request for an inquiry on account of the extreme importance of the subject to the profession. He suggested that one of the children's hospitals should change its customary anæsthetic for one or two years to a mixture of chloroform and ether in order to observe the results.

Mr. F. F. BURGHARD remarked that in one of Dr. Guthrie's cases at Paddington-green on which he had operated the notable thing was that death occurred after the *second* time of operating. The case was one of a very large nævus of the chest and arm and the first operation, which had taken place several weeks before, was much the longer and the more severe of the two; nevertheless the child recovered without a symptom of any sort referable to chloroform administration.

Dr. J. F. W. SILK confessed that he had been very sceptical with regard to Dr. Guthrie's first paper ten years ago; he was now very astonished to find that it had been discovered in Edinburgh of all places that quite possibly chloroform might produce some ill-effects. He commented on the occurrence

of the condition only in older children in spite of the fact that chloroform was given to very large numbers of infants. It was strange also that no relation could be established between the size of the dose administered and the production of the condition.

Mr. H. P. NOBLE had administered the anæsthetic in two of Dr. Guthrie's cases. Perhaps these cases were commoner than was usually supposed. He now thought that two deaths which he witnessed at the Hospital for Sick Children, Great Ormond-street, when he was house surgeon there were probably due to this condition.

Mr. W. J. MCCARDIE (Birmingham) had never seen a case, although he remembered the death of a patient on the fourth day after similar symptoms; however, no necropsy took place. Froster had described two cases of parenchymatous degeneration due to chloroform administration and showing slight albuminuria, vomiting, and collapse before death. Fatty changes were found in the heart, the liver, and the kidneys. That author laid stress on the kidney lesions, especially on the fact that they were more advanced in the tubules than in the glomeruli, which was a diagnostic feature. He wondered whether such conditions were more apt to occur in lymphatic children, as they stood most adverse influences worse than other children. The moral was always to use ether in children.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—Anatomy of the Pelvic Fascia.—Anatomy of the Enlarged Prostate.

A MEETING of this society was held on June 1st, Professor JOHN CHIENE, the President, being in the chair.

Dr. NORMAN WALKER showed three men suffering from Lupus complicated with Epithelioma. One of these was aged 32 years and had suffered from lupus since infancy. An epitheliomatous mass appeared on his face about one and a half years ago and it has to be noted that no x-ray treatment had been employed in this case previously to the development of the cancer. Since April, 1904, he had been treated with five-minute exposures to the x rays every second day and the result was excellent. The other two patients had been treated with the x rays for lupus before the appearance of the epithelioma. Dr. Walker also showed a case of Diffuse Psoriasis treated by the x rays. He had been sceptical as to this mode of treating the disease but with no other treatment than 14 exposures the disease had practically disappeared.

Mr. GEORGE CHIENE exhibited the following cases. 1. A man after operation for Rupture of the Middle Meningeal Artery and Laceration of the Temporo-sphenoidal Lobe. The patient received a blow and as a result fell. It could not be determined which of these caused the injury. He was kept in prison for two days and while there wrote a letter. His gait was, however, noticed to be peculiar and he was admitted to the medical wards of the Royal Infirmary. Five days after the injury he became much worse and hemiplegia and complete aphasia developed. As the lesion was localised his skull was trephined; no extradural clot was present, but on opening the dura mater several clots escaped and the brain substance was seen to be lacerated. The bleeding was from a point low down. It was evidently a case of intradural middle meningeal hæmorrhage. A solution of adrenalin chloride was applied and the artery was ligatured by means of a cleft palate needle. Gradual recovery took place, though even now there were marked signs of irritability and the man lost his temper on very slight provocation. His speech was now good except when he was excited. 2. An infant on whom Laparotomy for Acute Intussusception was performed when 40 days old. Reduction was difficult but was facilitated by the application of swabs of hot sterilised wool. 3. A child after Laparotomy for a second attack of Acute Intussusception. The first operation was performed when the child was four and a half months old. After recovery the infant suffered from attacks of measles and pertussis and 18 months after the first operation suffered from a second intussusception which also had to be treated by laparotomy. Even at present the child suffered from constipation and difficulty in regulation of the bowels. Both children were now strong and healthy.

Dr. W. ALLAN JAMIESON showed a case of Keloid treated by the X Rays. The patient was a female aged 26 years. In October, 1893, she suffered pain in the region of the left breast with tenderness on pressure. This was treated for several days by rubbing in acetic acid for an hour on each occasion. This caused abrasion of the skin followed by extensive suppuration. On healing keloid appeared. On examination in March, 1904, many spots and patches of keloid were present, the area involved measuring three and a half inches in vertical height by two and a half inches across. Numerous minute outlying dots were also present. The surface was bright pink and the ridges were elevated about one third of an inch above the skin level. She had been treated by 44 exposures to the x rays of five minutes' duration each, with the result that all the smaller points had disappeared and the larger ones had almost faded. As she was anæmic ten grains of iron alginate had been administered most of the time. She was pregnant.

Dr. JOHN STEVENS showed a young man who, as a result of infantile paralysis, suffered from extensive and almost Complete Atrophy of the Muscles of the Shoulders, Arms, Forearms, and Hands, especially on the left side.

Dr. EDWIN BRAMWELL demonstrated a case of Klumpke's Paralysis in a man. This was a lesion of the eighth cervical and first dorsal nerve roots. The man had fallen from a height of 20 feet, striking against the right side of the head and right shoulder. At first there was complete loss of power in the arm, though this had improved very considerably. Most of the muscles of the arm and forearm were normal, but the flexors of the hand on the wrist and also the interossei were atrophied, as well as the muscles of the thenar and hypothenar eminences. The power of opposing the thumb was almost absent. The little finger could not be abducted. All the small muscles of the right hand, the two long flexors, as well as the flexor carpi ulnaris were weak and consequently the grasping power of the hand was feeble. There was also anæsthesia of the skin with a very definite distribution as a linear band running down the inner side of the upper arm and forearm and splitting at the ring finger.

Dr. GEORGE GIBSON exhibited a case of so-called Hypertrophic Pulmonary Osteo-arthropathy in a patient (male) suffering from slight emphysema. Over the last two phalanges of each finger the skin was sodden-looking, always moist, and devoid of hair. These areas corresponded to the nerve distribution of the ventral divisions of the nerves of the back of the hand.

Dr. DAVID WATERSTON read a communication entitled "Some Points in the Anatomy of the Pelvic Fascia in the Male in Relation to the Surgery of that Region." He said that there was a difference of opinion among surgeons regarding the best method of removing the prostate gland and this had led to a fresh examination of the anatomy of the perineal region both by section and by dissection. The improved methods now available gave clearer results than were formerly attainable and might be of service in demonstrating the advantages and difficulties of each method. Taking up first the best means of access to the organ from the perineum Dr. Waterston exhibited lantern pictures from photographs of formalin preparations of the anatomy of the perineum. The specimens showed that the superficial layer of the triangular ligament was not intimately related to the urethra but was attached round the margin of the bulb and that Cowper's glands lay in intimate relation to the deep aspect of the bulb and were not separated from it by a strong membrane. This explained the course of extravasated urine into the perineum in cases where the membranous urethra was torn. Taking next the musculature of the perineum it was pointed out that the muscle tissue was arranged in a very complex manner. This subject had been investigated and thoroughly discussed in the early part of the last century, but as the arrangement was very complex and difficult to demonstrate the full description was omitted from most anatomical text-books. Such structures as Wilson's muscle and the compressor of Cowper's glands were not now described. But recent advances in operative work on this region had led to descriptions by several writers, mostly continental, of structures which were found to be of surgical importance, such as the muscle passing from the anal canal to the membranous urethra. This muscle was shown and attention was directed to the thick anterior part of the levator ani muscle and to the strong character of the deep layer of the triangular ligament which was pierced by the urethra and also supported the prostate. The sheath which the prostate possessed, derived from the visceral

pelvic fascia, was also demonstrated from mesial sections through the pelvis, in which also the prostate could be shelled out in the manner first described by Dr. Stoney. The third point taken up was the relation of the urethra to the prostate gland. It was shown by a specimen that in some cases of even moderate enlargement of the prostate it was possible to tear the urethra out of the gland, carrying with it a coating of prostatic tissue, and thus it would be quite possible in such cases to remove a considerable part of the gland, leaving the urethra intact. When the gland was enucleated in this way from the fibrous capsule it was shown that a definite amount of tissue was left behind—the so-called "capsule" which microscopically consisted of laminated bundles of muscular and fibrous tissue with flattened spaces lined by epithelium in the interstices and which was really part of the gland substance.

Mr. ALEXIS THOMSON read a paper on the Anatomy of the Enlarged Prostate so far as it Bears on the Operation of Prostatectomy. He said that in complete sections of the organ examined by a low power of the microscope the enlargement was seen to be due to a diffuse hyperplasia of the glandular tissue. Hyperplasia of the fibro-muscular stroma was exceptional and usually very limited in extent. There would appear to be both a new formation of gland epithelium in the form of buds which extended outwards from the acini into the surrounding stroma, as well as dilatation of the already existing glandular spaces by accumulation of altered secretion in the form of glandular débris and corpora amylacea and sometimes of visible calcareous concretions. The fibro-muscular stroma of the organ, although in some specimens the seat of hyperplasia, more often suffered from the increasing predominance of the glandular elements, becoming rarefied and to a large extent absorbed between the dilated acini. He had never been able to demonstrate the presence of encapsulated tumours, whether adenomatous or fibro-adenomatous, in the series of 40 prostates examined by him and he was inclined to doubt their existence. He did not therefore recognise the "shelling out of independent tumours" from the substance of the enlarged prostate in the strict sense of the term. Such "shelling out" was necessarily attended with tearing of the rarefied stroma surrounding the portion of the prostate which was thus removed. At the periphery of the organ the fibro-muscular stroma was condensed and formed a definite laminated capsule. With regard to the changes occurring in the peripheral stroma and bearing on the question of enucleation, he said that if the capsule of the normal prostate was incised and an attempt was made to enucleate the organ by dissection, this would be found to be impossible by any other means than the continued use of a sharp knife. The capsule was so intimately and firmly united to the general stroma or framework of the organ that their separation could only be effected by cutting. The same was true of the common form of cancer of the prostate. In the common innocent glandular hyperplasia the peripheral stroma was so broken up, thinned out, and to a large extent absorbed, that there was little difficulty in breaking or tearing asunder the trabeculæ which remained between the enlarged gland spaces. When glandular hyperplasia was the chief element in the enlargement, as it was in the great majority of cases, this separation of the peripheral stroma from the capsule was readily effected by means of the finger. The prostatic urethra was intimately connected with the stroma of the organ; as a result of the surrounding glandular hyperplasia its wall became thinned and stretched and was represented only by a delicate mucous membrane. When the prostate was enucleated by blunt dissection with the finger the line of separation was within the confines of the proper capsule of the organ. The line of cleavage might pass between the layers of the capsule or through the peripheral zone of the parenchyma, leaving a variable amount of this behind. Intracapsular enucleation was not only effected with the least expenditure of force but avoided the risk of tearing the periprostatic veins and of removing the striped muscle fibres, both of which lay outside the capsule. If the enucleation was undertaken within the confines of the capsule the finger should never come into contact with either the seminal vesicles or the pelvic fascia. When the organ was enucleated from its bed in one mass, the urethra necessarily came away along with the prostate but when it tore along the mesial plane into two lateral masses, the wall of the urethra might remain in a more or less intact state, being connected through the stroma with the capsule in the middle line anteriorly. So far as the anatomy of the enlarged prostate itself was concerned there was nothing to influence the choice of route for enucleation of the prostate. In the suprapubic method the finger-nail tore through the mucous membrane covering the vesical aspect of the organ; in the perineal method it tore through the mucous membrane of the prostatic urethra.—The PRESIDENT, Professor D. J. CUNNINGHAM, Dr. NICOL (Glasgow), Mr. H. J. STILES, and Mr. DAVID WALLACE discussed the paper.

GLASGOW SOUTHERN MEDICAL SOCIETY.—A meeting of this society was held in the rooms of the Glasgow Medical Club on June 2nd, Mr. Thomas Richmond being in the chair.—Dr. John Gordon read a paper entitled "An Early Diagnosis: its Limitations." After commenting upon the importance of the subject, notably in cases of malignant disease, Dr. Gordon referred to the "trifling ailments" with which practitioners were constantly coming into contact and complained that in such cases little trouble was taken as a rule to make any definite diagnosis, the patients being treated on general principles and many of them getting speedily well, and yet there was reason to believe that it was just these so-called trifling conditions which formed the *fons et origo* of many of the graver pathological conditions seen in later life. In speaking of means of diagnosis Dr. Gordon referred to the ordinary methods of physical examination at present in vogue, but while allowing their excellence where lesions were gross it could not but be admitted that finer methods were required for purposes of early diagnosis; hence the importance of the study of physiological and pathological chemistry. Dr. Gordon enumerated a number of well-founded diagnostic tests in chemistry and bacteriology and declared that in laboratory methods of examination lay our hope for the future.—After some little discussion Dr. Gordon, on the motion of Mr. Richmond, was accorded a warm vote of thanks.

Reviews and Notices of Books.

Lectures on Diseases of the Nervous System. Second Series: Subjective Sensations of Sight and Sound, Abiotrophy, and other Lectures. By Sir WILLIAM R. GOWERS, M.D., F.R.C.P. Lond., F.R.S. London: J. and A. Churchill. 1904. Pp. 250. Price 6s. net.

LECTURES by Sir William Gowers are always characterised by interest and lucidity and all students will therefore be grateful to him for having revised and republished in book form many that he has delivered during the last few years. The first of ten in the volume now before us is the Bowman lecture which was delivered in 1895 but the materials have been rearranged and the whole has been rewritten. In this lecture he deals with subjective visual sensations, prefacing his observations with physiological considerations to demonstrate that in addition to the half-vision centre in the occipital lobe there exists a higher visual centre in the region of the angular convolution which immediately subserves the perception of visual impressions. He discusses the significance of "crossed amblyopia" and the intimate functional relation of the two hemispheres, the result being that peripheral impressions to reach the right higher centre have to pass through the higher centre of the left side and loss of this involves peripheral blindness on both sides. Dealing next with colour vision he discusses the importance of the "areal colour-field" and shows that simple stimulation of the central part of either retina augments the sensitiveness of the periphery to colour. Then follows the most interesting portion of the lecture, the application of these facts to the features of morbid action as met with in migraine and epilepsy. The expanding angled spectrum experienced by Dr. Airy is reproduced, with an account of his drawing of the "fortification spectrum." Other figures which serve to illustrate this section were drawn by a distinguished water-colour artist from his own sensations and by a mechanical engineer and mechanical

draughtsman. Sir William Gowers describes the inhibition of function with the visual discharge of migraine and endeavours to trace the connexion with central changes. The whole account of migrainous spectra teems with interest but for adequate appreciation the lecture must be consulted rather than summarised here; it may, however, be regretted that the figures are not coloured.

In dealing with subjective sensations of sound Sir William Gowers lays stress upon the persistence which soon convinces the sufferer that they cannot be due to an external cause and he notes that patients complain of noises *in* the ears and noises *in* the head. While much interest attaches to the classification of the varieties of these auditory forms of subjective sensation and to the discussion of their relation to vertigo, Sir William Gowers, though hopeful about the future, is not very cheering as to the present means of treating this troublesome condition. The chief lesson which he teaches is the futility of tying the internal carotid.

Other lectures included in this volume are upon Abiotrophy, Myopathy, Metallic Poisoning, Syphilitic Disease of the Nervous System, Syringal Hæmorrhage into the Spinal Cord, and Myasthenia and Ophthalmoplegia. The lecture on abiotrophy was published in our columns about two years ago[1] and it will be remembered for the ability with which Sir William Gowers suggested this new term and explained the scope of its meaning. He shows that the conception of abiotrophy is of great service in connexion with numerous forms of cutaneous, muscular, and nervous changes and he clearly indicates its relationship to the interstitial overgrowth which occurs with so many primary changes in the nervous system. His conclusion is that the new conceptions in this article will enable us to think more clearly about processes which we do not understand. This cryptic remark implies the adoption of the conceptions as working hypotheses or as algebraic symbols which may favour the attainment of ultimate truth through intermediate patches of obscurity. The two lectures on Inevitable Failure and the Use of Drugs, which seem rather disconnected from the general plan, yet have peculiar value for the thoughtful treatment bestowed upon them. Looking back gratefully to his apprenticeship to a general practitioner the author says that he learnt thus early that treatment by drugs does in a large number of cases not only a definite but a great amount of good, and while contrasting empirical and rational treatment his respect for modern experiment is exceeded by his reverence for experience which he defines as the result of innumerable experiments.

Enough has been said to show the wide scope of these lectures and the interest which they possess for all professional men. They are written in striking terms, with apt illustrations and numerous studied epigrams. The author proclaims that so far from liking new words he dislikes them and yet it would be possible to cull from this volume a fairly large number with which he has enriched medical diction, and most of them, in American parlance, have "come to stay" and have already been of service to others who desire to express a conception for which no name previously existed.

The Extra Pharmacopœia of Martindale and Westcott. Revised by W. HARRISON MARTINDALE, Ph.D., F.C.S., and W. WYNN WESTCOTT, M.B. Lond., D.P.H., His Majesty's Coroner for North-East London. Eleventh edition. London: H. K. Lewis. 1904. Pp. xxiv.–809. 24mo, roan limp. Price 9*s.* 6*d.* net.

IT is a little more than 20 years since the first appearance of the Extra Pharmacopœia and the popularity and utility of the book can be gathered from the rapidity with which new editions have been issued. There can be no doubt that this epitome of recent work has been much valued by those who are unable to keep pace with the advances of pharmacy which are chronicled in the pharmaceutical and medical journals. The appreciation of former editions of this volume is largely due to the frequent references to the original sources from which it has been compiled, but in addition it must be admitted that the general level of excellence of the selection of material renders an invaluable service to busy practitioners. In the present edition space has been gained by the deletion of much that was getting a little antiquated. The plan and scope inevitably lead to the temporary inclusion of many drugs of an ephemeral character and the authors are to be commended for the judgment displayed in the deletions necessary to make room for more recent and perhaps more valuable additions.

In spite of every care it has been found necessary to add more than 100 pages and yet, by the employment of thinner paper, the size and weight are appreciably less than in the last edition. The scope of the work has been extended by the addition of several new sections and while these are useful in some instances they seem to be a little out of place in a work of this character; the section on surgical dressings and apparatus, which occupies 12 pages, seems to be little more than extracts from an unpriced catalogue. Mild surprise will also be felt at the inclusion of 14 pages relating to mineral waters. The information is trustworthy and valuable, it is interesting to know the chemical constituents, the uses and the season at which the health resorts may be visited, but the whole section is scarcely suggested by the title of the book and might well have been omitted. In like fashion the space devoted to radium might have been reduced; an attempt is made to tell too much relating to the extraction and to the chemical properties of radium. Roentgen rays, high-frequency current, the Finsen lamp, and radiant heat are also briefly dealt with but in all of these we feel that the information is incomplete as well as redundant. When dealing with subjects more purely related to pharmaceutical work the authors are far more happy. There is much that is admirable in the critical remarks on the weights and measures of the British Pharmacopœia and a step in advance has been made in the insertion of doses on the metric system. The lengthy list of chemicals, drugs, galenical preparations, and modes of treatment which have claimed recent attention sufficiently indicates the charitable catholicity which aims at the inclusion of all things. In fact, the present edition errs, perhaps, in the attempt to supply answers to all possible questions relating to new drugs without sufficiently holding the balance between good and bad, valuable and worthless. A similar excursion into outlying provinces occurs in the preface where the authors state that "the recent deaths by carbon monoxide, carbon dioxide, and illuminating gas poisoning have made it necessary to mention the methods of detection of these noxious gases." Why is it necessary to do this? Are there not other books in which such information would be more appropriate? It is in no spirit of carping criticism that we object to the introduction of extraneous matter; it is because the book in its earlier form has proved so useful to professional men that we regret to see it altered in scope and character, to find its excellencies in danger of being obscured or hidden by the introduction of redundancies for which there appears to be no justification. An immense amount of labour has obviously been expended in the abstraction of the literature relating to methods of treatment and to recent pharmaceutical research work.

The general character of the Extra Pharmacopœia is so well established that medical men will welcome a new edition which has been brought up to date. They will find therein all that they require relating to advances in pharmacy. If they realise also that they are supplied with

[1] THE LANCET, April 12th, 1902, p. 1003.

more than they anticipated or desired in other directions it is to be hoped that they will not feel disposed to complain. We think the authors are mistaken in the liberality with which they include antitoxins, analytical memoranda, and much other information, but can heartily commend the sections dealing with drugs and galenicals for their fulness and accuracy.

A Manual and Dictionary of the Flowering Plants and Ferns. By J. C. WILLIS, M.A., Director of the Royal Botanic Gardens, Ceylon, some time Frank Smart Student, Gonville and Caius College, Cambridge, and Senior Assistant in Botany in the University of Glasgow. Second edition. Cambridge: at the University Press. 1904. Pp. xii.–670. Price 10*s.* 6*d.*

THE object of this work is "to supply within a reasonable compass a summary of useful and scientific information about the plants met with in a botanical garden or museum, or in the field." As the author very truly remarks further in his preface, "the student, when placed before the bewildering variety of forms in such a collection as that at Kew, does not know where to begin or what to do. ..... The available works of general reference are mostly very bulky and often out of date, and as a rule refer only to systematic or economic botany, and say nothing about morphology or natural history." Therefore the author has endeavoured to bring together in his book in a systematic and convenient manner as much information as is required by any but specialists upon all plants usually met with, discussing only those points—morphology, classification, natural history, economic botany, &c.—which do not require the use of a microscope.

The work is made up of three parts, the first of which deals with general considerations regarding the outlines of morphology, natural history, classification, and other kindred branches of botanical science; the second portion is essentially a dictionary fully describing the families and more briefly the important genera of the Pteridophyta and Phanerogamæ, while Part 3 consists of a glossarial index of economic products, technical terms, and so on. The first edition, published seven years ago, was issued in two volumes; the present edition is in one volume and there are further alterations which may be briefly referred to. In order that the work may not exceed a reasonable size Part 1 has been abbreviated by the omission of matters of controversy and by the use of smaller type for descriptive paragraphs and other articles. There have, however, been added valuable articles on practical subjects of interest to field botanists; for instance, the collection and preservation of material. Part 2, which has been revised and rewritten where necessary, is, of course, the most important portion of the book. It is singularly complete and we may safely express the opinion that no important genus about which information may be required by those for whom the work is intended has been omitted. And further, the information given is both sufficient and up-to-date with very few exceptions.

As regards omissions we may perhaps be allowed to draw attention to the following. The presence of spine-bearing roots is a well-known but uncommon feature; there is, however, no reference to their occurrence in *Discorea prehensilis*, which plant affords us an excellent example of such a morphological modification. Another instance may be found on p. 300. In the article on Chalazogamæ there is an abstract of Treub's classical work on *Casuarina*, in which the main features of the structure of the embryo-sac and fertilisation are given. The more recent work of Frye on the same subject is not, however, mentioned, which is to be regretted inasmuch as the observations of the latter investigator differ in some important points from those of the former, although the main fact is corroborated.

In conclusion, it may be stated that the work forms a most valuable reference book for all those interested in plants and that no serious student can afford to be without it. These opinions are based not on a hurried perusal but on the experience gained by its use during a number of years; indeed, almost since its first appearance.

The General Pathology of Inflammation, Infection, and Fever. By E. W. AINLEY WALKER, M.A., M.D. Oxon. London: H. K. Lewis. 1904. Crown 8vo. Pp. xii.+260. Price 4*s.* 6*d.*

THIS modest little brochure on the General Pathology of Inflammation, Infection, and Fever is a re-issue of a course of lectures delivered in 1902 and originally published in the *Clinical Journal*. The subject constituted, as the author informs us in his preface, "the first series of Gordon lectures delivered at Guy's Hospital, under the deed of endowment of the Research Lectureship and Laboratory established at that hospital by the munificence of Robert Gordon, Esq., of Brockham-park, for the advancement of the science of medicine and the encouragement of that spirit of investigation and inquiry for which Guy's Hospital is by tradition and history alike most justly famous."

Much has been published in the past on the subjects dealt with in Dr. Walker's lectures and of that a large proportion is controversial in character. A trustworthy and impartial synopsis of our knowledge of these subjects is therefore welcome at the present juncture when questions of infection and immunity are attracting so many workers in the field of experimental research. The present volume certainly fulfils this function, for although in one sense it is a compilation it is a compilation made in a masterly manner. In compact and handy form the original and classical experiments are reviewed and the various theories deduced therefrom are enunciated, discussed in the light of modern research, and finally weighed, the entire mass of accumulated facts being presented in an orderly and logical sequence. The first four lectures are devoted to a systematic study of inflammation, commencing with the conception of this process handed down from the time of Galen. The various modifications and additions down to the most recent definitions propounded by Adami are detailed, and of the many definitions put forward we note the author favours, not unnaturally, that associated with the name of his preceptor Burdon Sanderson, to whom the volume is dedicated. A summary of the phenomena of inflammation which we are quite willing to admit might well replace any or all of the existing definitions rounds off the book. The causes, processes, and progress, and the effects of inflammation are well treated, and incidentally we wish to express our entire agreement with the author in his deprecation of the looseness of language and of thought which ascribes a purposive character to processes occurring in living protoplasm.

Infection and immunity occupy six chapters, undoubtedly the most valuable in the book. After giving the necessary elementary details and definitions the author briefly reviews the rise and progress of our knowledge of microbial infections, then passes on to the discussion of the modes of bacterial action, and after touching on the question of susceptibility proceeds to the study of immunity proper. The views of Metchnikoff, Grohmann, Bouchard, and Ehrlich are in turn presented to the reader and discussed in all their bearings, and in this connexion we do not recollect having previously read a more intelligible and lucid account of Ehrlich's "side-chain" theory of immunity in the English language than that set out by Dr. Walker. The author's own researches on the various phases of immunity entitle him to deal with this subject in an authoritative manner and we confess to some disappointment in finding so little reference

to his own work in these lectures, a criticism to which not many authors lay themselves open.

The general pathology of fever, with which the last chapters of the book are occupied, is treated in the same systematic and thorough manner as the subjects dealt with in the earlier parts of the book. A short but sufficiently full index is followed by an index of over 200 authors' names, a perusal of which latter is sufficient indication of the ground covered by Dr. Walker, whilst the book itself affords abundant internal evidence that at any rate the majority of these authors have been consulted first hand and in the original. A pleasing feature of the book, and one but too rare in works of this character, is the adequate acknowledgment of the part played by British workers in the elucidation of the problems connected with the subjects which give Dr. Walker the title for his book. In conclusion, we wish this little book the success that it deserves.

A Text-book upon the Pathogenic Bacteria for Students of Medicine and Physicians. By JOSEPH MCFARLAND, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Philadelphia Hospital and to the Medico-Chirurgical Hospital, &c. With 153 Illustrations, a number of them in colours. Fourth edition, rewritten and enlarged. London and Philadelphia: W. B. Saunders and Co. 1903. Pp. 629. Price 15*s.* net.

NUMEROUS as are the text-books of bacteriology, especially by American authors, which have appeared in recent years, a new edition of the present work may yet be welcomed heartily. The popularity of the book, evidenced by the need for a fourth edition within seven years, has "stimulated both author and publisher to endeavour in every way to make it merit continued approbation," and undoubtedly the efforts of both have been crowned with success. A detailed criticism of a work which has reached its fourth edition can hardly be necessary but it may be useful to point out in what directions this work differs from other text-books and the principal changes made in this new issue. In the first place, there is, as indicated in the title, a rigid exclusion of all micro-organisms which are not pathogenic either to man or to some of the lower animals and of all parasites other than those belonging to the group of bacteria. In the next place, it "is not to be mistaken for a laboratory guide," though, as a matter of fact, the descriptions of the principal methods of staining and other processes used in practical bacteriology are quite as fully and clearly described as is usual in text-books which profess a more ambitious aim. Throughout the methods described, however, there is always, as in the chapter on Sterilisation, a reference to the practical needs of the medical man, so that, as the author states, it is essentially a work for the use of physicians, students of medicine, and sanitarians. This new edition has been practically rewritten and much new matter incorporated but the addition to the contents has not increased the number of pages, as a smaller type, which, however, is still large and of excellent clearness, has been used. Other changes consist in the introduction of a large number of references to original papers and an index of authors. Certain errors in the description of Gram's method which were noted in the review of the second edition have been corrected and Van Ermengen's method of flagella staining has been inserted.

The book is divided into two parts. The first is occupied with general facts about bacteria and the technique of bacteriology while the second part deals with specific diseases and their associated bacteria. The growth of our knowledge of immunity has naturally necessitated a considerable extension of the space devoted to this subject which is treated clearly and judicially, though the space occupied in the consideration of rival hypotheses does not seem always to be commensurate with their relative importance. We could wish that some of the space occupied by Viquerat's lactic acid theory had been devoted to the "side chain" theory of Ehrlich, as this is treated in so brief and summary a manner that we fear the student will find difficulty in understanding it. Though it is quite logical that the consideration of natural immunity should precede that produced experimentally yet as the facts bearing on this latter condition are so much the more numerous and definite there are distinct advantages in reversing the order of treatment. Similarly it is difficult for the student to grasp the multitude of apparently contradictory facts with which the hypotheses of immunity deal until he has studied the pathogenic organisms and their results in detail and it will not be until Part II. of this work has been mastered that the full value of the earlier chapters of Part I. will be realised.

Part II. is distinguished by its method and orderly arrangement. Each chapter begins with what may be described as a definition of the organism which is therein treated and each organism is studied in a series of paragraphs, with headings in larger type, which follow each other in definite and, so far as is possible, invariable sequence. This makes for clearness. The whole of the second part is excellent and the points of practical interest to the medical man are well brought out. Some erroneous statements as to the action of antiseptics on anthrax spores which occurred in the second edition have been altered.

The book includes chapters on the Bacteriology of Air, Soil, Water, and Some Foods. The space devoted to these subjects, though small, is quite as great as, in the present unsatisfactory state of our knowledge of these departments of bacteriology, is required in such a work. There are numerous illustrations which, like the rest of the book, are well printed. They are taken from various well-known sources and, the author remarks, are "surely superior to anything new covering the same ground."

LIBRARY TABLE.

Slight Errors of Refraction and their Influence on the Nervous System. By C. ERNEST PRONGER, F.R.C.S. Eng., Harrogate: R. Ackrill. 1903. Pp. 31.—Our readers will recollect the publication of Dr. G. M. Gould's views as to the profound and far-reaching effects produced on a person's general health by the existence of visual defects. Particulars will be found in Dr. Gould's paper on the Ill-health of Richard Wagner, which appeared in THE LANCET of August 1st, 1903, p. 306. More recently—namely, in THE LANCET of April 30th, 1904, p 1181, Mr. Simeon Snell has dealt with the same theme in a paper on Eyestrain as a Cause of Headache and other Neuroses. Mr. Pronger's monograph is a reproduction in book form of a paper read by him before the Harrogate Medical Society in March, 1903, and the illustrative cases quoted in it show that the author, who is ophthalmic surgeon to the Harrogate Infirmary, has for the last ten years been studying the remote effects of eyestrain. Headache, insomnia, nervous disturbances in children, vertigo, depression, and abnormal irritability are some of the ailments which he has traced to this cause, with the result that the wearing of appropriate spectacles gave immediate and complete relief.

Notes on the Treatment and Filling of Teeth. By W. CASS GRAYSTON, L.D.S. Second edition. London: The Dental Manufacturing Co., Limited. 1904. Pp. 254. Price 5*s.* net.—The dental practitioner will find much useful information in this little book. The author does not pretend to deal with his subject exhaustively but rather aims at referring to certain practical points which he himself has found of value and he very wisely remarks that it

is the man and not always the method that makes success. A point clearly emphasised and worthy of the attention of the young practitioner is that the ideal is not always possible and that the patient is a factor to be considered in the treatment of a tooth. In places we might feel inclined to challenge some of the statements made and this is more especially the case in the chapter on the relief of pain; there is in this section apparently a lack of knowledge of pathology and general surgical principles.

What we Owe to Experiments on Animals and *The Case against Antivivisection.* By STEPHEN PAGET. London: The Scientific Press, Limited. 1904. Pp. 72 and 104 respectively. Price 1*s.* 6*d.* and 2*s.* respectively.—The facts that are briefly stated in the first of these well-composed pamphlets have already been published by the author at greater length and with more references in a book called "Experiments on Animals" (John Murray, 1903). A short summary of the facts is given in this issue which will be useful to anybody who wishes to know what has really been gained by the help of experiments on animals in physiology, pathology, and practice. The evidence adduced by the author ranges over the following subjects:—The discoveries connected with the circulation of the blood by Galen, Realdus, Harvey, and Malpighi; the discovery of the lacteals and lymphatic system by Asselius and Rudbeck, and of the functions of the gastric juice by Réaumur and others; the discovery of the glycogenic function of the liver by Claude Bernard; the experiments made by Galen, Sir Charles Bell, and Magendie on the nervous system; the contrast between the work of the great clinician Semmelweis in the General Hospital of Vienna and that of Pasteur in his laboratory in connexion with inflammation and puerperal fever; and the work of Lord Lister. The author also summarises what we owe to experiments in the treatment of anthrax, tubercle, diphtheria, tetanus, rabies, cholera, plague, typhoid fever, malaria, and yellow fever. A summary of the Act relating to experiments on animals (39 & 40 Vict., c. 77) concludes this pamphlet which should be read by all those who are interested in the progress of scientific medicine and its relations with experimental research. In the second pamphlet the author states that he hopes against hope that his work will not give grave offence where no offence is intended, but he is bound to be aggressive even though he keeps close to the subject, which comprises the methods, literature, and arguments of the antivivisection societies. His essay is concerned with them and with nothing else. In putting the case against these societies the author writes: "It comes to this, that the medical sciences are a system of natural sciences, bound to make use of experiments, fallible, dependent on other natural sciences, and set to find and prove facts that will stand the test of time. Such a fact may, or may not, come straight out of the experimental method, and it may, or may not, go straight into the practice of medicine." Mr. Paget traces the history of the antivivisection movement. The dates show that the oldest of these societies came after the Royal commission of 1875, not before it; the first societies and the Royal commission were alike the expression of a widespead opinion 30 years ago that experiments on animals ought either to be forbidden or to be restricted. He details the policy of these societies, how they are divided into two parties—the one asking for restrictions, the other for nothing short of abolition—and brings out how this division between them and the tone of the National Society towards the smaller societies waste their energy and their funds and hinder them from working together. These societies during the last quarter of a century have published a vast quantity of literature. Mr. Paget examines the style of this literature during the past few years and the arguments which it puts forward. He also examines the attitude taken by these societies towards certain problems and 'interests' that closely concern them—viz., towards sport, towards the medical profession, and towards the hospitals. He writes: "They do not hesitate to take advantage of all those improvements of medicine and surgery which have been made by the help of experiments on animals. They denounce the work of the present; but they enjoy all the results of the past, and will enjoy all those of the near future." Mr. Paget's pamphlets render good service in recording succinctly the knowledge that has been derived from experiments on animals and in stating the case against antivivisection in convincing words and well-arranged sections.

The Meaning of a Modern Hospital. By W. BRUCE CLARKE, M.B. Oxon, F.R.C.S. Eng., surgeon to St. Bartholomew's Hospital. London: Longmans, Green, and Co. 1904. Pp. 47. Price 1*s.*—This small book is an enlargement of an address which the author gave at the Abernethian Society of St. Bartholomew's Hospital some two years ago. The address was printed in the *Hospital Journal* and this present issue is the outcome of a number of inquiries which have been addressed to the author and a request that it might be published. In doing so the author hopes that he may appeal not merely to those of the medical profession who are specially interested in the construction and well-being of hospitals but also to that somewhat larger class, the governors of, and visitors to, hospitals who are often called upon by their medical staff for certain improvements and are sorely bewildered as to why modern medicine and surgery require so many additions to the equipment which sufficed for their forefathers. Mr. Bruce Clarke acknowledges how largely he has drawn on the writings of Parkes, Galton, and Henry Burdett and how much he is indebted to them. On first glancing through the pamphlet, indeed, the reader wonders where the necessity for such a work arises, seeing that all the points touched on are to be found discussed in the many manuals on hygiene and public health that are now in the hands of the public. On reading the pamphlet carefully, however, we are struck by the excellent arrangement of the subject matter and the fulness of the detail. Here we have in a small pamphlet of 74 pages a thorough and well-arranged guide for the construction and internal arrangements of an up-to-date hospital, and remembering that the pamphlet is partly intended for non-medical readers we feel that it will meet a want and be of real use to those of the public who are interested in such matters and whose business it is to look after the well-being of these great public institutions. In turn the author treats of what a hospital is, the ward unit, ward accessories, the hospital pavilion, methods employed for cutting off one ward unit from other similar ward units in the same pavilion, the grouping of ward units together, the roof, grouping of the pavilions, isolation blocks, operating theatres, the warming and ventilation of the hospital, pathological department, sterilisation of surgical dressings, residents' quarters, nurses, out-patient accommodation, and supervision. We cannot agree with Mr. Bruce Clarke that it is good or right to allow the sister of a ward to sleep in the room provided for her adjoining the hospital ward. No doubt being constantly in touch with her work does give her a greater interest and hold over her ward than can be the case when she sleeps at a distance from it, but at what an expense the gain is derived. We think that the sisters and nurses are better housed in separate buildings and that in this way their health of mind and body is better maintained.

VICTORIA INFIRMARY, NORTHWICH. — Mid-Cheshire's memorial to the late Queen is to be the extension of the Victoria Infirmary, Northwich. The erection and equipment of the extension are to cost between £4000 and £5000, and it was intimated the other day that Messrs. Brunner, Mond, and Co. have promised to give £1000 to the fund being provided.

THE LANCET.

LONDON: SATURDAY, JUNE 11, 1904.

Hospital Sunday.

ON Sunday, June 12th, appeal will be made on behalf of the hospitals of London to the congregations assembled for worship within and without the metropolitan area, wherever those in authority are willing to hold collections for this noble cause. Again the hospitals through the agency of the Metropolitan Hospital Sunday Fund solicit alms on behalf of the suffering poor and again we are called upon to make public their needs, to call attention to their indebtedness, and to insist on their good claim to the bounty of the charitable. In 1903 the collection made by the Metropolitan Hospital Sunday Fund amounted to the record sum of £64,975, of which £15,766 ranked under the heading of special donations. On the only two other occasions upon which a sum exceeding £60,000 has been collected the special donations were £16,307 and £21,990 respectively, so that the splendid total of last year was an achievement of which the anonymous givers who contribute to the offertory as well as the special donors of large sums may be justly proud. It rests now with the congregations who worship in church, chapel, and synagogue, and upon their friends who may not be present in person, to see that the record of 1903 is beaten by that of 1904 and that the steady progress which the Fund has made since its first effort in 1873 may continue without interruption. The hospitals have not only to struggle in order to meet the liabilities which the absence of fixed incomes necessarily imposes upon them and in order to maintain their efficiency in the districts which immediately surround them, but they have to meet the demands of a resident population which steadily and rapidly grows larger by the influx of precisely that class of needy, or more often destitute, workers whose choice in time of serious sickness or injury lies between the hospital and death. Besides this, increased facilities for travelling, the appreciation by the poor of the benefits obtainable, and other causes bring to the hospitals of London patients from all parts of the kingdom and often from localities in which no contribution is made to the metropolitan institutions through the Metropolitan Hospital Sunday Fund or otherwise.

Reference to the increasing population of London naturally brings to mind the foreign population, to a large extent consisting of the poorer classes, which fills whole streets in some districts and the presence of which has recently excited considerable attention. We have no desire to enter now into what has to some extent become a political question but we may point out that the Metropolitan Hospital Sunday Fund subsidises the French, the German, and the Italian hospitals in the same proportion as it does all others which fulfil its conditions as to management and efficiency, and also that our English hospitals pay no more regard to nationality than they do to religious creed. In such circumstances we express the hope that none of those foreigners who find London a pleasant place of residence as well as a profitable one will forget that a large number of their countrymen struggle for a living in it and in time of sickness and accident partake of its charity. We are a nation at peace with all the great powers and the influence of our monarch has been and is being exerted to convert that peace into friendship where too little friendly feeling existed before. The foreigner profits with the Briton from the security which such friendliness imparts to their mutual relations and he cannot show his appreciation of the fact better than by recognising the claims of the hospitals of London upon his generosity, those hospitals in which the KING and his gracious Consort who shares his throne never cease to evince their deep interest. In expressing our sincere hope that the current year may witness a further augmentation of the receipts of the Metropolitan Hospital Sunday Fund we do not make reference to the poverty of individual hospitals. The success of the Fund is largely due to the efforts of its organisers to insure that its distribution shall be in accordance with the efficiency of the institutions assisted. It is not enough for a hospital to show that it is poor, it must also show that its poverty is met with an honest front and must demonstrate the business-like efficiency of its administration. In insisting upon the necessity of carefully kept accounts readily to be understood by those wishing to examine them the Metropolitan Hospital Sunday Fund has strengthened its own position and that of each hospital which through its influence has adopted the methods recommended.

The benefit accruing to the wealthier classes from the support which they bestow upon the hospitals for the sake of their poorer brethren must not be forgotten by them. It is not limited to aid afforded in the case of accidents occurring in the neighbourhood of hospitals but consists, as the LORD MAYOR in the letter which we publish at p. 1684 aptly reminds us, in "incalculable services to those who can afford to pay for the experience gained within their walls." This is a matter to which the public may well direct its thoughtful attention. We who live in the year 1904 are familiar with conditions which to our ancestors of even a century ago would have seemed well-nigh miraculous. Vaccination has almost banished small-pox from our midst and would stamp it out completely for us did we only give it a full opportunity to do so. Operations are performed in circumstances of anæsthesia and asepsis which the most indifferent layman must realise to have been formerly not only impossible but inconceivable. But does the layman realise how much of this is due to the hospital or how much of the skill involved in the individual act of surgery has been acquired in these noble institutions and would not have been gained without them? Although the present age is one of progress and of considerable public and popular interest in the discoveries of science the public is curiously prone to grasp at shadows. The ills of human life are matters of discussion in the lay press and, to take two prominent instances, "cures" for cancer and consumption are being continually announced as accomplished facts. It is a question whether the larger public which should support the hospitals, and

without whose universal support the hospitals live a precarious existence from day to day, fully realise that in the hospitals alone the saving measures which they so eagerly desire can ever be brought within the reach of suffering humanity. They too often ignore or forget the fact that such discoveries as are necessary before fell diseases can be dealt with by medical science are not the result of inspiration or of speculation. They are born of close observation of diseased conditions in all their varieties and of ceaseless study and interchange of knowledge such as are possible only in the wards of our hospitals and in the laboratories attached to them. It is not, however, for the sake of benefits some day to be enjoyed by themselves, or possibly received already, that we would urge all to give on Hospital Sunday but rather in order that their poorer brethren may be succoured by their generosity and may bless the kindly charity of the known and the unknown givers.

The Influence of the Unrecognised Case in the Spread of Communicable Disease.

WITH the advent of fresh administrative measures for the control of an infectious disease, no less than upon the discovery of fresh scientific facts about the disease, enthusiasts are apt to arise and proclaim that the application of such measures or the influence of such discoveries will result in stamping out. Time alone suffices to cool their ill-directed ardour, but time supplies fresh enthusiasts to re-enact the drama in connexion with other measures and other diseases. When JENNER discovered that vaccination was protective against small-pox he was led away by his enthusiasm to assert that such protection was lifelong before the time necessary to furnish the essential evidence had elapsed. It required experience to satisfy all fair-minded persons that the prophecy was not fulfilled and that to complete protection revaccination was necessary. And now vaccination has to bear the brunt of the original over-statement. With the introduction of the isolation hospital there came from unbalanced extremists somewhat similar prophecies. Infectious diseases, by means of these admirable institutions, would be "stamped out." Again the testimony of experience has cooled their ardour or convinced them of their error. When in 1889 the Infectious Diseases (Notification) Act was passed the machinery for dealing with infectious disease was thought to be complete and the only thing necessary to extinguish the diseases to which the Act related was to make the measure general throughout the country. This has now been done; but nevertheless considerable leakage in connexion with scarlet fever and diphtheria still ensues. And finally tuberculosis has received the attention of the enthusiast. According to some of those who figure prominently in the crusade against the "great white plague" the disease may be "stamped out" by sanatoriums alone; according to others compulsory notification is required; others again think that the prohibition of promiscuous expectoration would precede abatement of all forms of the disease. Since pulmonary tuberculosis is steadily declining in this country, and is likely ere many decades have passed to become extinct, it may be difficult to disprove some of the extravagant claims made in these directions, more especially as the promoters of the several panaceas seem to keep carefully in the background the fact that the disease has been steadily declining for years past and long before any direct measures against it were taken. The fundamental error underlying the fallacious beliefs and unfulfilled prophecies to which we have referred is the tendency to assume too readily that we know the whole truth with regard to the numerous and complicated factors which make up what we term "disease," and it is against this misleading conception that we have in recent years endeavoured to protest in the pages of THE LANCET. One result of the over-statements in question has been the uprising of numerous anti-bodies, if we may apply this bacteriological phrase to agencies directed against the establishment of vaccination, the erection of isolation hospitals, and the provision of other unquestionably useful preventive measures and institutions. There has been in the past too great a tendency to overlook the fact that the greatest victories of public health have been what may be termed indirect victories. That is to say, that the diseases which have either vanished or are apparently in process of disappearance are those against which few direct measures have been taken. Perhaps the best illustration of this fact is the case of typhus fever, the organism of which has not yet been definitely isolated and concerning the natural history of which disease we know but little. We know, however, that the malady flourished in the overcrowded hovels of the poor where filth and poverty held sway. Now the disease is almost extinct in this country. A somewhat similar observation may be made with regard to relapsing fever and plague, while the best instance of the dying disease of the present day is that of pulmonary tuberculosis.

These reflections lead us to ask why it is that greater success has not hitherto attended our direct efforts—why it is that in spite of our compulsory notification and our isolation hospitals scarlet fever and diphtheria are still with us in a material and disturbing degree. We are not prepared with a final answer nor are we desirous to add yet another unfulfilled prophecy to the instances which we have already quoted. But there can, we think, be little doubt that a potent factor in promoting the persistence of these two diseases is the very large number of cases of each which entirely escape recognition. The medical officer of health is too prone to believe, when he has taken a map, has blocked out on it all the notified cases, and arranged them in groups according to the milk-supplies or the schools attended, the whole story is before him. But what a different story a medical man, specially trained in the various manifestations of scarlet fever, might bring back could he make a house-to-house inspection of the district and carefully examine the inmates. Or, supposing diphtheria to be the disease in question, how might the map become modified could the bacteriologist examine the throats of all those both inside and outside the invaded area. What, too, would be the bacteriologist's story were he able to examine all the articles in the houses in which cases of diphtheria had occurred, houses which had been through a process of disinfection

in so far as the room occupied by the patient after the disease was recognised? We are glad to see that Dr. ARTHUR NEWSHOLME drew attention to the importance of the unrecognised case in a lecture which he recently delivered at Victoria University, Manchester. There can be no doubt that the necessity of searching out suspicious or unnotified cases, which has so long been insisted upon in the memoranda of the Local Government Board, is not adequately acknowledged in the public health service generally, notwithstanding the fact that the progress of bacteriology has rendered such search all the more promising and all the more necessary. Anyone with experience of epidemiological investigations will easily recall instances where whole households have been notified on a given day and where the appearance of the individual cases was such as to leave no doubt of the fact that the cases had occurred at different dates. Dr. NEWSHOLME pointed out that the onus of a mistaken diagnosis is so great that medical men hesitate to act at the moment when the information which they might give would prove of maximum value to the medical officer of health. Obviously it is difficult for cases to be recognised and isolated the very moment when they become infectious—and precisely when this is we are by no means clear—but unless this can be done there may be very grave obstacles in the way of "stamping out" any given outbreak by means of notification and isolation alone. Fortunately, in connexion with certain diseases our preventive measures are becoming simplified by the progress of protective inoculation, and although we can hardly look forward to such brilliant results in the case of all diseases as have attended our efforts with respect to small-pox and diphtheria we may, perhaps, reasonably hope that temporary immunity from attack may ere long be attainable in connexion with several diseases.

But if advantage of modern knowledge is to be taken there must be a considerable expansion of the department of the medical officer of health. It is not feasible to make use of the sanitary inspector in the matter of diagnosis, hence if suspicious cases are to be sought out diligently properly trained assistant medical officers of health must be employed. Moreover, there must be greater facilities afforded for the employment of bacteriology as an aid to epidemiology, and more inducements must be offered to medical practitioners to make use of such facilities in connexion with doubtful cases. All this means increased expenditure both of time and money, but it is as well that the public should appreciate this fact: that if they desire the maximum use to be made of notification and of isolation hospitals a more earnest effort than heretofore must be made to discover the unrecognised case. Moreover, more extensive powers must be procured for the control of "contacts" and for the temporary seclusion of those who may be found to be harbouring pathogenic bacteria in their throats or elsewhere, though the yoke must not be made too vexatious at first, for the public coöperation will be wanted. A careful study of the conditions which have led almost to the extinction of typhus fever and to the decline of tuberculosis in this country may perhaps help us to make greater resistance to other infectious diseases.

Periodic Hydrarthrosis.

THE writings of Professor HOWARD MARSH have always been characterised by an especial degree of lucidity and accuracy which have greatly contributed towards the ready adoption of any new views which he has put forward from time to time. The volume of collected lectures which he published a few years ago bore eloquent testimony alike to his extensive experience and his knowledge of contemporary scientific literature, and the medical profession always awaits his words with interest. Great service can be rendered to surgery by men who occupy high positions in its pursuit when they give to the profession the fruit of many years of observation to assist in the recognition of morbid processes heretofore undescribed. It is for this reason that we welcomed heartily in our columns Professor MARSH'S Hunterian lecture, delivered at St. George's Hospital on May 25th and printed in our issue of June 4th, for it dealt with a very obscure condition. Very little is known of intermittent hydrops articuli but it is probably by no means so rare as might be thought. The text-books are silent but here and there scattered about in surgical literature lie many cases which may confidently be included in this category without counting many others about which doubt may reasonably be felt. Professor MARSH by his lecture will assist other observers to diagnose the condition, and with a larger number of cases collated more definite knowledge may be obtained.

The earliest case recorded appears to have been under the care of VEILLARD in 1857, but others which were earlier were quoted at a discussion at the Société de Chirurgie of Paris after PANAS had described a case in the year 1878. Professor HOWARD MARSH has described two cases, each of which had some noteworthy points. In one there was a definite history of injury, where, three months after an apparently complete recovery, pain returned in the knee and with intervals lasted for many months. At first there was no perceptible swelling but later swelling was present and was especially obvious at night. The periodicity was very well marked, for regularly every evening the patient's knee became swollen and painful and every morning it returned almost to the normal. In the second case the joint affected, which was also the knee, became very swollen every fortnight and the swelling lasted three days and then subsided. Here the regularity of the recurrence was very exact. From an examination of some 45 cases which have been recorded it is seen that the joint most frequently affected is the knee, and this might have been expected, for as the condition is clearly an affection of the synovial membrane and as the knee has by far the greatest extent of synovial membrane, we should anticipate that the knee would be likely to suffer most frequently. Both knees may be affected and the disease may be confined to this articulation, but any of the large joints may be involved. In some cases the affection is limited to the joint first attacked; in others it passes in succession from one joint to another. The duration of an individual attack may be very short, in one of Professor MARSH'S cases it did not exceed 15 hours, but in the average case each attack lasts four days, half of this time being occupied in the progress of the swelling and pain and half in the subsidence of the symptoms. The interval

between the commencement of successive attacks were most commonly a fortnight and it is curious how frequently in the accounts we meet with this degree of frequency of return. But the intervals may be very short, as in one of Professor MARSH'S cases where the exacerbations appeared daily. In some the intervals vary greatly. In one case described by PLETZER the attacks occurred irregularly at first, later they came on every three months, and later still an attack appeared every fortnight. In PANAS'S case the first attack appeared in a woman a fortnight after delivery and lasted four days; subsequent attacks came on once a fortnight and regularly on a Monday. The disease lasted four years and during this time the patient bore two children; and it is interesting to note that during the pregnancies the attacks were suspended. The local lesion is not absolutely identical in all the cases. In most there is definite, and often extensive, effusion into the synovial cavity but in others the chief change appears to be a thickening of the synovial membrane itself and this membrane is always thickened to some extent in cases which have lasted long. In the same case at one time there may be much effusion and at another the thickening of the synovial membrane is more in evidence. On the whole more women are attacked than men and the disease is rare before puberty. Occasionally there has been noticed a coetaneousness between the attacks and the menstrual periods but it is not unlikely that this was a mere coincidence. The treatment cannot be said to be satisfactory. In a number of cases the joint has been aspirated and a little of the fluid withdrawn for examination. It has never been found to be purulent but is always a thin synovia. In a few cases a bacteriological examination has been made and in all but two of those examined the fluid has been found to be sterile, and it is not improbable that in the two exceptions there had been accidental contamination. In a few cases the administration of quinine has been followed by a complete or partial disappearance of the swelling and pain, and one of Professor MARSH'S two cases proved a good instance of the value of quinine. In other cases arsenic has proved of great utility. Both of these drugs have failed, and failed utterly in many cases, but their marked success at times is such as to justify their routine employment in any case met with of this nature. No other treatment appears to be of any use.

When we approach the question of the etiology of intermittent hydrarthrosis we are confronted with the great difficulty that we have so very few facts on which to build a theory. The value of quinine and arsenic suggests that the condition may be malarial in origin, and, indeed, in several of the cases there has been a definite history of malaria. The undoubted failure of these drugs in still more cases shows that the association with malaria is probably not causal. The rapid appearance of the swelling and the equally rapid subsidence suggest that the lesion is vaso-motor in origin and therefore dependent on a disturbance of the nervous system, and this view is supported by the frequent occurrence of neuralgia in many of the cases. In one instance exophthalmic goitre was also present and this is also suggestive of a nervous etiology. Professor MARSH aptly quoted in his lecture three cases of periodic vomiting, described by JOSEPH ADAMS in 1815; two of these recovered under treatment with arsenic. These cases appear to bear some analogy to those of intermittent hydrops and, on the whole, it may be said that the nervous theory of origin has much to support it. Fuller knowledge of the disease can only be achieved by a wide observation of cases and now that the affection has been so clearly brought to the notice of the profession by Professor HOWARD MARSH it may be hoped that instances of it will be recognised, examined, and described.

Annotations.

"Ne quid nimis."

THE CHAIR OF PATHOLOGY IN THE VICTORIA UNIVERSITY.

DURING the last few years a large amount of bacteriological and other scientific work has been done for various sanitary authorities in Lancashire and Cheshire by the public health laboratory of Victoria University, Manchester. That the investigations and the resulting reports have been highly appreciated is sufficiently shown by the progressive increase in the work, for whereas there were 1504 such subjects reported on in the year 1897, there were 4652 in 1900, and 5220 in 1901. The laboratory is one of the divisions of the bacteriological department of the Owens College and was originally intended only for use in connexion with teaching, but the result of subsequent developments was to make it a well-recognised place of reference in matters relating to infectious diseases. The rapid increase of work rendered necessary in succession the appointment of laboratory assistants, the removal of the laboratory to larger premises, and the appointment of an assistant lecturer in the pathological department to relieve the professor of pathology of part of his routine teaching duties. A more important change was initiated in the summer of 1903, when it was decided to apportion the work of the existing chair of pathology between two new chairs—namely (1) a chair of pathology and pathological anatomy which would deal with the subject as needed by medical students preparing for medical qualifications; and (2) a chair of comparative pathology and bacteriology dealing with pathology from the public health point of view, the courses given by the incumbent of that chair being intended for advanced and public health students, including veterinary surgeons preparing for qualifications in veterinary State medicine. The directorship of the public health laboratory is also attached to this latter chair. The existing Procter chair of general pathology and morbid anatomy has been held since 1891 by Professor Sheridan Delépine who, we understand, will for the future carry on the duties of the chair of comparative pathology and bacteriology. The chair of pathology and pathological anatomy is therefore vacant and as announced in THE LANCET of May 28th applications from intending candidates will be received up to June 27th. It is stated that two local candidates—Dr. I. Walker Hall and Dr. F. C. Moore—well known both as pathologists and as teachers, are already in the field. The foundation of a chair of comparative pathology marks a new departure in connexion with medical education in this country and the Victoria University is to be congratulated on the step forward that it has taken. By the new arrangement the professor of pathology and pathological anatomy

will be in a position to devote all his energies to the interests of the medical student.

THE NATIONAL SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN.

THE annual meeting of the National Society for the Prevention of Cruelty to Children was held on May 18th The report for the past year is in most respects a satisfactory one. It is significant that the number of prosecutions is steadily diminishing and is 136 below that of last year, warnings to offenders having proved more effective than formerly. The one discouraging feature in the society's record is its financial position. It is true that the amount derived from annual subscriptions is greater by £586, while the cost per child protected has fallen from 13*s.* 5*d.* to 13*s.* The total income of £63,101 is nevertheless £1301 under that of last year, while the expenditure amounts to £67,919, which leaves a deficit on the whole of £4818. When this is added to the pre-existing debt of £10,884, the total liability of the society amounts to £15,702. The executive council is not indifferent to the meaning of these figures. Special efforts in the form of bazaars and fêtes have been organised with a view to increasing the deficient revenue and not without success. On the other hand, the necessity of stringent economy is fully recognised. It is proposed to reduce as far as possible expenditure on publishing which in certain branch districts appears to have been carried out on a somewhat liberal scale. Legal and medical expenses will also be reduced. Solicitors and medical men will only be applied to when their services are indispensable and payment will be made upon a basis previously arranged and notified. There is no desire, as far as we can gather, to minimise the value of professional assistance and we cannot blame the society for conducting this department of its work with an admission of the limitations imposed upon it by the amount of means at its disposal. The coat must be cut according to the cloth and provided that their remuneration is adequate medical practitioners are not likely to complain because it is not excessive.

GARBAGE AND POISONOUS MEAT.

Dr. George Newman, the medical officer of health of the borough of Finsbury, laid some very interesting items of information before his health committee on June 7th. For instance, on May 11th, Mr. Ralph Lustig of 26, Chapel-street, was fined at the Clerkenwell police-court upon two summons for depositing and exposing for sale 29 pieces of beef intended for the food of man which were unsound. Mr. Lustig was fined in all £6, a paltry sum when the seriousness of the offence is considered. From May 6th to June 2nd there were confiscated in Finsbury 3347 pounds of diseased and unsound meat, to say nothing of such cheering items as 253 sheep livers affected with fluke and hydatids, 69 beef livers with hydatids, flukes, and tuberculosis, and 22 beef lungs with hydatids and tuberculosis. The quantity is large for one borough and is probably due to the presence of the offal shops which congregate just outside the Central Meat Markets. One case of doubtful meat, however, is so important that it deserves special mention. On March 11th one of the sanitary inspectors, by name Billings, brought to Dr. Newman a piece of venison which, although not showing signs of putrefaction, was not satisfactory. Dr. Newman being doubtful about it sent it to Mr. A. G. R. Foulerton for bacteriological investigation. Mr. Foulerton reported that the meat had a faint smell which was not that of putrefaction. It was dry and cultures made from it revealed sarcinæ, a white coccus, and numerous colonies of a bacillus corresponding in character with the bacillus enteritidis of Gaertner. Rabbits were rapidly killed by small doses of cultures of this organism. The meat was hung in a moderately dry atmosphere until April 19th when it had shrunk to a certain extent but still there was no putrefaction. Only the Gaertner bacillus could now be found and this retained its virulence. Mr. Foulerton further pointed out that this bacillus has upon many occasions been shown to be the cause of so-called "ptomaine poisoning" and of meat-borne outbreaks of illness and Dr. Newman continues:—

> It is true that in the ordinary process of cooking this bacillus would probably be destroyed, but when present in such large quantities, as proved to be the case in this venison, the meat would be permeated with the toxins which this bacillus is known to produce, and these toxins would not be affected by the amount of heat necessary for cooking processes. It should never be forgotten that much of the danger due to the consumption of unsound meat is owing to such toxins (or ptomaines) as the B. enteritidis and allied organisms produce. This also is the chief reason for condemning the meat of animals which have died unbled. The dangerous qualities of this meat are therefore unmistakeable and a joint of this kind would be all the more dangerous in that the dryness produced by the hanging to which venison is subjected would check or prevent the occurrence of putrefaction and so an important danger signal would be altogether wanting. The case is therefore of exceptional interest and illustrates the importance of scrupulous care on the part of the trade to avoid exposing such meat for sale and for the council the importance of thorough meat inspection.

Meat of this class is exceedingly dangerous and very difficult of detection and we think that Inspector Billings deserves every credit for his acumen.

TUBERCULOUS MENINGITIS IN ADULTS.

THE clinical description of tuberculous meningitis is based upon cases observed in children, in whom the disease is most common. The *Boston Medical and Surgical Journal* of May 12th contains a valuable paper by Dr. H. Jackson on Tuberculous Meningitis in Adults. He finds that the symptoms differ markedly from those of the disease in children. The paper is a study of 18 cases observed at the Boston City Hospital in the last few years. Seven of the patients were between the ages of 18 and 25 years, eight between 25 and 35 years, and three between 40 and 45 years. In three cases there was a previous history of a subacute disease two years before admission, which suggested preceding tuberculous disease—namely, in one case pleurisy, in one a cough which lasted a long time and kept the patient in bed, and in the third case some disease that kept the patient in bed several weeks. In one case no history was obtainable and in the remaining 14 cases there was no history of a preceding illness. Therefore in the diagnosis of tuberculous meningitis the absence of evidence of a preceding tuberculous disease is of little weight. On the other hand, in only two cases did the necropsy fail to reveal old healed tuberculous lesions but in none was there extensive disease capable of diagnosis during life. The period of illness before admission was much shorter than in children. One patient was admitted as a case of sunstroke with the history of sudden unconsciousness, one had complained of sore-throat for two days, one had been ill for two weeks, three for a week, and seven for ten days. In one case the patient had been ill with vomiting and diarrhœa for four weeks. In only three cases was there a history of symptoms lasting several weeks and in these there was general, in addition to meningeal, tuberculosis. The prodromal symptoms in all were indefinite and suggestive of many acute fevers rather than of cerebral disease. In only four cases was stress laid on headache or vomiting though slight headache was present in others. Three patients were delirious and in the case of one insanity of some form was suggested. The general impression made by the cases may be gathered from the fact that in most of them Widal's test was performed. The course of the disease in hospital was that of some cerebral trouble. One-third of the cases presented the state described as "typhoid delirium" and two-thirds presented varying degrees of stupor and delirium. Headache was often admitted when the question was asked but in only one case was it severe. The kind of headache,

photophobia, cerebral cry, and restlessness usually present in children suffering from the disease were absent. In two cases there were convulsions. In the first part of the acute stage the pulse was slow. The rate was usually from 60 to 70 until the last few days of the disease and occasionally was as low as 50. In the last two or three days of life the rate was from 130 to 150 and in a few cases even to 180. The temperature was unimportant, being usually from 100° to 101° and rarely over 102·5° F. In one case it was normal or subnormal. The leucocyte count was lower than in acute cerebro-spinal meningitis. Of nine cases 23,000 were found in one, 17,400 in another, and in the remainder the number was below 12,000. Lumbar puncture was performed in eight cases. In all the fluid spurted out, showing that it was under pressure. The fluid was almost clear and contained a few flocculi. In one case the bacillus tuberculosis was found in it. The results were therefore very different from those obtained in acute cerebro-spinal meningitis, in which the fluid is purulent or semi-purulent and organisms are easily obtained on culture. Examination of the fundi yielded little of importance; in only one case was optic neuritis found. In three cases there was no paralysis but the patients were very ill and died soon after admission. In 12 cases paralysis was limited to one or more ocular muscles. Thus the rule was that paralysis was limited to the ocular muscles. In two cases there was slight facial paralysis in addition to strabismus. In one case there was extensive paralysis—left mydriasis and complete left hemiplegia. Other signs of cerebral disease, such as retraction of the head, Kernig's sign and opisthotonos (found only once), were less frequent and less marked than in cerebro-spinal meningitis. After the onset of acute symptoms three patients died in less than three weeks and several in less than one week. The clinical and post-mortem examination of the lungs corresponded; in no case was a lesion found sufficient to give rise to signs during life. In 16 of the 18 cases small areas of chronic pulmonary tuberculosis or caseous lymphatic glands were found. Acute miliary tuberculosis of the lungs was present in seven cases and general acute miliary tuberculosis in five. The spinal meninges were involved in eight cases.

THE SUNSHINE OF ENGLAND AND SWITZERLAND COMPARED.

IN THE LANCET of May 14th, p. 1370, the sunshine recorded during April in Switzerland and the south of this country was compared and it was seen that the advantage was altogether with the latter. The figures for May, on the contrary, show that during that month the conditions were reversed, the only British station to approach the majority of those in Switzerland being Jersey, a spot which represents Normandy far better than it does England. The Swiss values were probably higher than they appear in the table, for the two days for which the records are not to hand may have been almost cloudless. All the home totals were much below those of a normal May, especially on the coast of Sussex, while it is curious that London, which had an excess greater than the other places in April, should have maintained its relative superiority by having a comparatively small deficit during May. The disproportion in the records from Switzerland and our own coasts is, of course, greater than it appears, as at this time of the year the sun is above the horizon a very appreciably longer time with us than is the case about 250 miles further south. Even in the more northern parts of these islands, where the duration of daylight is greater than on our south coasts, the sunshine was less than that registered during April. Aberdeen had 145 hours, Harrogate 128, Nottingham 136, and Birmingham 133. The most sunny of the Swiss resorts was again that situated near the borders of Italy, Lugano, and this was followed at a respectful distance by Berne, the elevated Davos, and Zürich. The station with the greatest altitude (Santis) had the least sunshine, but even that was equal or superior to any of our own resorts excepting Jersey and Torquay.

May Sunshine in the South of England and in Switzerland.

Stations.	No. of hours.	Differences from average.	Stations, with altitude.	No. of hours.*
Aberystwyth	172	?	Geneva (405 metres)	182
Scilly Isles	163	– 75	Lausanne (563 ,,)	199
Plymouth	178	– 40	Montreux (553 ,,)	185
Jersey	193	– 57	Berne (572 ,,)	208
Torquay	183	– 47	Basle (278 ,,)	186
Bournemouth	172	?	Zürich (493 ,,)	204
Hastings	158	– 77	Santis (2500 ,,)	178
Margate	143	– 52	Davos (1560 ,,)	205
Bath	142	?	Lugano (275 ,,)	239
London (Westminster)	130	– 34		

* These totals are not quite complete, the returns for the 6th and 21st not being available.

CHILDREN'S COUNTRY HOLIDAYS FUND.

The Earl of Erroll and Lord Avebury have just issued a letter of appeal on behalf of that large and important section of our population, the 800,000 children under 14 years of age who fill the elementary schools of London and West Ham, the majority of whom do not leave London for a holiday in the country or leave it for a single day's excursion only. It is the object of the Children's Country Holidays Fund to place within the reach of children of either sex and every creed whose parents are willing to assist the opportunity of obtaining the permanent physical and moral development which is fostered by residence amid new surroundings and by a glimpse of nature and of country ways. The fund has, except in a few cases, adopted the plan of boarding out London children with country cottagers. In 1903 over 34,000 children were sent to country friends in this manner, the cost per head being about 14*s.*, including railway fares. But the work is always growing and larger expenses can only be met by more liberal help. The fund is doing more and more each year to provide for a very real and urgent need and it is for this reason that the Earl of Erroll and Lord Avebury once more appeal to the public to assist. Cheques should be made payable to the Treasurer, 18, Buckingham-street, Strand, W.C.

BLOOD CHANGES PRODUCED BY ETHER ANÆSTHESIA IN MAN AND THE LOWER ANIMALS.

IT has been known for some time that the inhalation of ether and consequent entry of ether into the circulating blood are followed by blood changes chiefly of the nature of hæmolysis. A careful paper by Dr. J. M. Anders and Dr. L. N. Boston of Philadelphia, which space does not permit us to print in full, details experiments bearing on this point that have been performed upon animals and observations made upon the human subject with regard to the same question. The subjects of investigation were in the case of human beings patients undergoing comparatively slight operations or else persons inhaling ether purely for the sake of the investigation. Earlier research has shown that the fall in hæmoglobin in ether anæsthesia reaches its lowest level 24 hours after the termination of the anæsthetic state, one half of the fall taking place during the first hour after anæsthesia and the other half during the next 23 hours. Dr. Anders and Dr. Boston find similarly that hæmoglobin is reduced in

every instance as the result of ether anæsthesia, that the reduction varies according to the length of the inhalation, that 10 per cent. of the reduction takes place during the first 20 minutes of the inhalation, and that hæmoglobin reaches its lowest level at from 24 to 30 hours after the termination of the anæsthesia. There is less decided loss during a second administration conducted soon after the first and the reduction is more quickly recovered from. Changes in the red cells are always present after the anæsthetic state is reached, the individual cells being thick and compact. Leucocytosis occurred in two-thirds of the animals experimented upon. In human beings the leucocytes were sometimes increased and sometimes diminished, always returning to the normal number soon after the cessation of anæsthesia. Myelocytes in small numbers appear in human blood after ether anæsthesia. As regards hæmoglobin Dr. Anders and Dr. Boston find that the colour index reaches the normal 72 hours after the cessation of anæsthesia. In general terms it may be said that etherisation produces increased hæmolysis, followed by rapid regeneration of cells with increased number of red corpuscles.

THE HEREDITARY TRANSMISSION OF ALKAPTONURIA.

Dr. Archibald E. Garrod sends us the following interesting note:—"In the *Gazzetta Medica Lombarda*, 1889, vol. xlviii., p. 115, Professor Francesco Orsi of Pavia gave an account of 'Tre individui di una stessa famiglia colpiti da Pirocatechinuria,' and on p. 135 of the same volume his assistant, Dr. Cesare Magni, has a further communication 'Sulla Pirocatechinuria.' These papers have hitherto escaped the notice of those of us who have collected the recorded cases of alkaptonuria. The very full description of the urine given includes practically all the characteristic features of alkaptonuria, such as the darkening on standing or on addition of an alkali, the reduction of Fehling's solution, the negative result of the bismuth test for sugar, and the absence of rotation of the polarised ray. The attribution of its properties to the presence of pyrocatechin was merely a reflection of the views prevalent at the time and Dr. Magni mentions alkaptonuria as an alternative name for the condition. In the absence of any direct evidence that pyrocatechin was the abnormal substance present in these cases we are justified as classing them as examples of alkaptonuria. The first patient, Signor C. S., aged 20 years, was brought to Professor Orsi by his cousin, a medical student, on the supposition that he had diabetes. Professor Orsi goes on to say: 'I had occasion later to analyse the urine of Signorina R. S., a sister of Signor C. S., and found it to resemble that of her brother. Moreover, I have been assured by the student, Signor F. S., that the urine of the mother of Signor C. S. and Signorina R. S. also presents the main characters of that of her children.' Although a large proportion of alkaptonurics are brothers and sisters, only one other instance of the direct transmission of the anomaly from parent to child is known—namely, in the family under Professor W. Osler's observation[1] in which a father and son and a brother of the father have exhibited the peculiarity. The fact that this hitherto overlooked record affords a second example is my excuse for calling attention to it in the present note." Dr. Garrod, as is well known, writes with authority on the subject of alkaptonuria and its literature, having himself also worked at the chemical relations of this peculiar substance. The above addition to the scanty number of cases on record is of great interest as an example of the hereditary transmission of the condition and also as indicating that some cases may have escaped notice, the reduction of Fehling's solution being attributed to some other substance such as pyrocatechin or sugar. It is also a point worthy of notice that several of the rarer anomalies of metabolism, such as pentosuria and cystinuria, as noted in another column (p. 1673), show peculiar family relations as do the more common metabolic diseases—gout and diabetes.

[1] See THE LANCET, Dec. 13th, 1902, p. 1616, and Jan. 2nd, 1904, p. 10.

ASH AN ASSET.

As everybody knows the ash left on burning tobacco is considerable and, as a matter of fact, the mineral matter of the tobacco leaf frequently amounts to as much as a fifth part of its weight. Thus, a ton of tobacco leaf would yield four hundredweights of ash which represents valuable mineral constituents withdrawn from the soil which have to be replaced by abundant manuring. It has been calculated that a ton of tobacco withdraws over a hundredweight of mineral constituents per acre of land. In 1901 the home consumption of tobacco in the United Kingdom was at the rate of two pounds per head, or a total of about 40,000 tons, which represents, at what is now a probably low computation, approximately 8000 tons of ash annually committed to the winds or dissipated in some way or other. This would appear to be an astounding waste of material which must be of enormous value to the soil considering that 75 per cent. consists of calcium and potassium salts and 15 per cent. of magnesium and sodium salts, including nearly 5 per cent. of the essential constituent to all plants—phosphoric acid. On the face of it there would seem to be a fortune in store for that individual who could devise a successful means for the collection of tobacco ash, and it is great pity that so much valuable material should for ever be lost to the soil without any attempt at direct restoration being made. It means an economic loss which without artificial resources would ultimately starve and ruin the soil used in the production of tobacco. Ash after all ought to be a valuable asset in the economy of things. Similarly, in the form of animal excreta there is annually an enormous loss of material of the utmost value to the soil, although the time may not be far distant when we shall see even that economically restored to the land. The late Sir John Lawes once argued that the discharge of sewage into the sea did not necessarily imply waste for we had it back in the shape of a bountiful fish harvest, but the sequence of events is very doubtful.

JAUNDICE IN SECONDARY SYPHILIS.

THOUGH jaundice in secondary syphilis has been described by writers from Paracelsus downwards it does not seem to have received much attention in this country. It is certainly far from common, for Werner in the records of the Hamburg hospitals found only 57 cases of jaundice in 15,799 cases of secondary syphilis. In the *American Journal of the Medical Sciences* for May Dr. W. J. Calvert has reported the case of a man, aged 27 years, who was admitted to hospital on June 6th, 1902, with intense jaundice. Six weeks before a sore developed on the glans penis. On June 3rd the patient first noticed the jaundice. On admission there were intense jaundice, an indurated chancre, one enlarged right inguinal gland, and slight general glandular enlargement. There was no fever. The liver was of normal size and not tender. The urine contained bile pigments but the fæces were not decolourised. Three days later a general macular eruption appeared. The general condition of the patient was good; there was neither fever nor digestive disturbance. Under mercury and iodide the jaundice and secondary symptoms disappeared in three weeks. The pathology of jaundice in secondary syphilis is not settled. It has been ascribed to various causes—enlarged glands pressing on the bile-ducts, secondary eruptions in the intestines obstructing the flow of bile, congestion of

the liver, and catarrh, similar to that of other infectious diseases. Two types can be distinguished, a benign and a grave. In benign cases the jaundice develops rapidly without the usual digestive disturbances of catarrhal jaundice. In three-fourths of the cases the jaundice develops simultaneously with the secondary symptoms; in the remainder it develops either before or after them. In degree it varies from a light to a deep tint. Its course runs parallel to that of the secondary symptoms. It lasts from a few days to two months, but if treatment is neglected it may become chronic. The hypochondriac region may be tender. In two of Werner's cases the liver was enlarged. The urine has the ordinary characters of jaundice and the fæces are more or less decolourised. Pruritus is seldom present. Werner observed xanthopsia in three cases. In grave cases the jaundice first develops as in benign cases, but on the fifth or sixth day delirium, hæmorrhage, purpura, or coma occurs and death often rapidly follows. In an annotation we have recently described at greater length this form and related a remarkable case.[1]

THE REBUILDING OF ST. BARTHOLOMEW'S HOSPITAL.

ON the evening of June 3rd a concert in aid of the Rebuilding Fund of the Royal Hospital of St. Bartholomew was given under the auspices of Signorina Giulia Ravogli at Queen's Hall. The principal item of the performance was Gluck's *Orfeo* in which Signorina Ravogli of course took the title part. She was assisted by Miss Lydia Nervil as Eurydice and Miss Martha Cunningham as Amor. The choruses were sung by the members of the Leeds Choral Union and the whole performance was conducted by Mr. Alfred Benton. We are glad to say that the hall was well filled so that the funds of the hospital must have benefited to a considerable extent. Signorina Ravogli's rendering of the part of Orfeo is too well known and too highly appreciated to be in need of any further praise here and she received every assistance from the other two principal singers. The choruses were sung with the attack and precision and the beauty of vocal tone for which the Leeds Choral Union is so well known. We cannot omit to give special praise to Mr. Albert Fransella's perfectly beautiful rendering of the flute part in the number entitled "Ballet of the Happy Souls," a melody which always seems to us as perfect an expression in musical terms of "Animula, Vagula, Blandula" as can be imagined. But Gluck's music is invariably in exact accordance with the feeling of the story which it illustrates. Mr. Malsch also deserves commendation for his playing of the hautboy obbligato to the air which follows almost immediately afterwards. After the performance of *Orfeo* the Leeds Choral Union sang two choral numbers by Elgar and Mendelssohn. Altogether the performance was most enjoyable.

VACCINATION IN BURMA.

IN the *Rangoon Gazette* of April 27th Dr. T. F. Pedley makes a very serious indictment of the management of the Provincial Vaccination Department of Burma. Briefly, his charges are that "a sufficient staff of competent honest vaccinators and a regular supply of good lymph" are not provided. In illustration of the latter complaint he states that in the Northern Shan States and Chin Hills the successful results in 1900–01 were officially given as 22·49 and 28·39 per cent. respectively. In Rangoon itself a vaccination depot for the production of animal lymph was established in 1883 and maintained until 1900, when the Government grant was withdrawn. Afterwards civil surgeons and district vaccinators were directed to obtain lymph from another station distant, as measured by time, a week or more from many places requiring its services. The lymph formerly provided in Rangoon had seldom or never failed even a month after its issue, but the new lymph is usually inert in a week or ten days and failures are frequent even earlier. As a natural result the Burmese are said to be losing confidence in vaccination, and resorting more and more to the ancient practice of small-pox inoculation. The diminution is officially acknowledged and the superintendent-general of vaccination attributes it to three causes: (*a*) that outside municipal limits vaccination is not compulsory or small-pox inoculation illegal; (*b*) that in the past the district vaccinators made false returns, which are now checked by closer supervision and by punishment; and (*c*) that an indifferent class of men seek employment as vaccinators. The last statement quite falls in with Dr. Pedley's contention. Vaccinators, it seems, have an average pay of about 27 rupees a month and this includes travelling expenses, so that coolies can earn more in the port of Rangoon. The questions raised by Dr. Pedley are certainly serious and demand full investigation. It is the boast of Britain that subject races benefit by its control. Obviously health administration is among the most important functions of central and local government. The Burmese are said to be a reasonable people, ready to accept vaccination if offered to them by trustworthy hands. In such circumstances the proportion actually vaccinated, which is given as about 300 per 10,000 of population in Lower Burma in 1902–03, is miserably small, and Dr. Pedley makes out a strong case for governmental responsibility for this most unsatisfactory state of affairs. The subject is very well worth the attention of those members of the British Parliament who take special interest in the welfare of our great dependencies in the Far East.

ON THE USE OF ALCOHOL IN CASES OF PNEUMONIA.

IN a suggestive and carefully reasoned paper on pneumonia, read before the Liverpool Medical Institution by Dr. John Hay and recorded *in extenso* at p.1643 of this issue, some strong views are expressed against the routine use of alcohol in cases of threatened cardiac failure during the course of that disease, supported by statistics and tables of somewhat startling character. He found that in considering a group of 150 cases, 47 of which were treated by himself without administration of alcohol, while the remaining 103 were treated by his colleagues, alcohol being given when the usually recognised indications for its administration arose, the mortality in the former group (those untreated by alcohol) was 16 per cent. less than that in the latter, or, eliminating the cases admitted moribund from both groups, there was a difference of 15 per cent. in favour of the cases treated without alcohol. Dr. Hay states that he has taken great care to eliminate every source of error and we must accept his figures as showing the difference he claims. At the same time there would seem to us to be one or two factors requiring elucidation, leaving out of consideration the smaller number of cases dealt with in the former group. First, although the average age of the two groups of cases is practically identical, it would have been of interest to compare the age mortality of the two groups in decade periods. Again, considering the group of 103 cases treated by his colleagues with alcohol there would seem to be three possibilities: first, that all the patients seen by them were treated with alcohol; or secondly, that the cases not treated by alcohol were excluded, which would seem to be negatived by the statement that no selection was made; or thirdly, that this group includes cases to which no alcohol was given, in which case it would be of interest to know what proportion these form of the total. These are points which require

[1] THE LANCET, April 30th, 1904, p. 1221.

elucidation before the absolute value of the figures given can be made out. Dr. Hay quotes the currently received views of the pharmacological actions of alcohol in support of his conclusions—viz., that it dilates the peripheral vessels and lowers the blood pressure, exerting no direct action upon the heart itself except to enfeeble it in large doses. At the same time examples are not wanting of drugs which seem to exert actions in disease almost in defiance, so to speak, of their pharmacological actions. Strychnine itself, which Dr. Hay so rightly commends as "a good stimulating cardiac tonic," is a case in point, for according to many pharmacologists strychnine has no action upon the heart, producing its effects on the vascular system entirely through the vaso-constrictor centre. We hold no brief for the use of alcohol in pneumonia; in fact, there is little doubt that it is frequently administered in too large amounts and too early in the disease. At the same time we cannot but feel that with so large a variation as 15 or 16 per cent. in so relatively small a group of cases the difference may be due to more than the one variant, especially when we remember that some statistics in other diseases—notably typhoid fever—certainly seem in favour of the use of alcohol. Dr. Hay's statistics are, however, a valuable contribution to a debateable question and we may express the hope that his work will direct attention to the matter and stimulate others to make observations.

THE CORONERS' SOCIETY.

THE Coroners' Society of England and Wales held its annual banquet at the Holborn Restaurant, London, on June 2nd. Amongst those present were the President of the society, Mr. H. White, who took the chair; Mr. Gray Hill, the President of the Law Society; Mr. H. A. Harben, chairman of the Public Control Committee of the London County Council; Mr. C. E. Troup, C.B., Mr. William P. Byrne, C.B., Mr. W. O. Danckwerts, K.C., Mr. William Martin, M.A., LL.D., Mr. M. L. Macnaughten, Assistant Commissioner of Police; the Mayors of Richmond (Surrey), West Ham, and Bury (Lancashire), Mr. T. Fraser Black, J.P., Mr. W. G. Austin, Mr. C. Edgar, J.P., Mr. W. H. Eves, J.P., Dr. G. Danford Thomas, Dr. F. J. Waldo, Mr. M. H. Taylor, Dr. S. I. Oddie, Dr. R. L. Guthrie, Dr. Ernest W. White, Dr. T. Outterson Wood, Mr. S. F. Butcher (vice-president), Mr. Walter Brooke, Mr. F. Danford Thomas, Mr. A. M. M. Forbes, Mr. R. M. Mercer, Mr. C. L. Rothera, Mr. T. Christophers, Mr. A. C. Langham, Mr. Luke White, M.P., Mr. Isaac Bradley, Mr. G. E. Hilleary, Mr. Lovell Smeathson, Mr. H. B. Sewell, Mr. E. D. Prickman, Mr. Walter E. Cunliffe, Mr. Henry White, jun., Mr. J. R. Richards, Mr. W. W. Parker, Mr. G. P. Wyatt (honorary treasurer), and Mr. Walter Schröder (honorary secretary). After the usual loyal toasts had been honoured Mr. Butcher proposed the toast of the "Imperial and Local Government," and in the course of his remarks pointed out that the Government should take more heed of the advice obtainable from coroners. Mr. Luke White, in replying, commented on the valuable experience gained by the coroners in connexion with the problem of the housing of the poor. Mr. Harben, who also acknowledged the toast, referred to the connexion between the London County Council and the coroners. The Mayor of Richmond, who also answered to this toast, spoke of the duties devolving on the coroners and mentioned how some of the work of local authorities was formerly discharged by the coroners. Mr. Bradley of Birmingham submitted the toast of "Our Guests," which was responded to by Mr. Gray Hill and Mr. Troup. The latter speaker eulogised the services rendered to the public by the Coroners' Society and especially dwelt on the good work done by Dr. Danford Thomas in supplying important information for the use of the Home Office. The toast of "The Officers of the Society," which was proposed by the President, was cordially received and was acknowledged by Mr. Schröder.

THE DISTRIBUTION OF PLAGUE.

THE medical officer of health of the Cape Colony states that for the week ended May 14th there was only 1 case of plague discovered in the colony—namely, a native male at Port Elizabeth. 395 rats and 127 mice were examined bacteriologically during the week, of which 4 rats proved to be plague infected. In the Cape Town and Harbour Board area 522 rodents were examined during the week but none were affected with plague. With reference to the Transvaal the following motion was passed unanimously by the Transvaal Medical Society at the meeting held in the board room of the Johannesburg Hospital on April 7th:—

That this society desires to place on record its keen appreciation of the work done by Dr. Charles Porter, M.O.H., Johannesburg, in organising the machinery, by Mr. W. C. C. Pakes and Dr. R. P. Mackenzie in perfecting it and carrying out the work in connexion with the outbreak of plague in Johannesburg, and further desires to congratulate them and all those associated with them on the success which has so far attended their efforts in controlling the spread of the disease. In the opinion of this society their promptness and energy have undoubtedly led to the saving of many lives.

As regards the Transvaal, a telegram from Lord Milner, received at the Colonial Office on June 4th, states that the plague return for the week ending that date was as follows: total number of fresh cases reported since May 28th, 2, both coloured persons. 3 cases have been found not to be plague, making present total of suspected and proved cases 139, 24 being whites and 115 coloured persons. The total number of deaths reported since May 28th was 1, a coloured person. As regards the Mauritius, a telegram from the Acting Governor, received at the Colonial Office on June 4th, states that for the week ending June 2nd there were 3 cases of plague and 2 deaths from the disease. In Hong Kong for the week ending June 4th there were 36 cases of plague and 37 deaths from the disease.

ON THE OCCURRENCE OF PENTOSURIA AS A FAMILY ANOMALY.

UNDER the above title Dr. M. Bial[1] of Kissingen records three cases of pentosuria occurring in one family. The first case was that of a married woman from Lodz who was referred to Dr. Bial for some slight degree of glycosuria with obesity. An analysis of the urine in a chemical laboratory at Lodz showed a reduction equivalent to 0·3 per cent. of sugar. Dr. Bial on testing it found that with Fehling's solution it gave a distinct reduction which appeared during boiling, while with the pentose testing reagent described by him[2] a very definite reaction was obtained. No results were obtained with fermentation or polarisation experiments. To confirm the presence of pentose the phenylhydrazin test was applied and the osazone was prepared from one litre of urine, about 0·5 gramme being obtained. This proved to be pentosazone, since its melting point was 150° C. and its nitrogen content was 17·01 per cent., while glucosazone has a melting point of 205° C. and a nitrogen content of 15·6 per cent. The brother of the same patient subsequently came under observation for "nervous diabetes," various examinations of his urine showing quantities of sugar varying from 0·1 to 0·3 per cent. Dr. Bial, by the application of the same tests, was able to show that the reduction of Fehling's solution was due to pentose and the patient, who was of neuropathic and hypochondriacal tendencies, was assured that his condition was a harmless one and not the grave disease

[1] Berliner Klinische Wochenschrift, 1904, No. 21.
[2] THE LANCET, April 19th, 1902, p. 1122.

he had imagined it to be. Another sister of this patient had also been regarded as diabetic but an examination of the urine proved the sugar to be pentose and not glucose. The urine of several other members of the same family was examined, including that of the father, of two other brothers, and of two children daughters of the first and third patients respectively, but neither glycosuria nor pentosuria was found. The paper contains an interesting *résumé* of the literature of pentosuria. The condition was first described by Salkowski and Blumenthal in 1895,[1] since which time a number of cases have been recorded by different authors, more especially during the last three years, among them in two sisters by Blumenthal. Both Dr. Bial and Dr. Blumenthal regard pentosuria as an anomaly of metabolism comparable to cystinuria, which has also recently been regarded as a family disease by Dr. Abderhalden. The importance of the condition of pentosuria, which is apparently harmless in itself, is its liability to lead to wrong conclusions in life assurance work and to its confusion with glycosuria and diabetes. It would certainly seem to be worth trying Dr. Bial's test in some of the cases in which a small or an anomalous reduction is obtained with Fehling's solution, as is the case in a not inconsiderable number of urines.

LEPROSY IN NEW SOUTH WALES.

IN a report to the Colonial Government, dated March 31st, 1904, Dr. J. Ashburton Thompson states that on Jan. 1st, 1903, there were 14 persons (13 men and one woman) remaining under detention in the lazaret at Little Bay, not far from Sydney. One patient was admitted, two died, and three were discharged during the year. There were therefore ten persons remaining in the lazaret at the end of the year; three were natives of New South Wales, of European descent, one was a native of Germany, one was a native of England, one was a native of the United States of America, one was a Javanese, and three were natives of China. The three patients who were discharged suffered from lepra nervorum; one of them returned to his home in the Island of Aoba and two, who were white natives of the colony, returned to their homes on the ground that the disease was quiescent. A charitable allowance was made to the family of one of them as it was very unlikely that his trophic mutilations would allow of his earning a livelihood. The working expenses of the lazaret for the year were £1696, being an average of £133 7*s.* 9*d.* per inmate per annum.

MEDICAL EXCURSIONS TO FRENCH WATERING PLACES.

THE sixth annual excursion to French watering places will commence on Sept. 3rd and will continue till the 15th. As on the previous occasions the leader of the party will be Dr. Landouzy, professor of clinical medicine in the Paris Faculty, who will address meetings at various places on the subject of the therapeutic applications of mineral waters. The district to be visited is in Central France and Auvergne. The party will assemble on the forenoon of Sept 3rd at Lamotte-Beuvron which is a station on the Orleans Railway between Orleans and Vierzon. An express train from Paris arrives about 10 A.M. After lunch and a visit to the sanatorium the party will leave at 3 P.M. for Chamblet-Néris. Among the numerous places subsequently visited will be La Bourboule, Le Mont-Dore, Royat, and Vichy. The party will separate at Pougues-les-Eaux on Sept. 15th. Only medical men and medical students, French or foreign, are eligible to join the excursion; medical men may be accompanied by their wives. All the French railways will convey members from their homes (and in the case of foreign arrivals from the frontier station) to Lamotte-Beuvron and on the corresponding return journey from Pougues at half fares. Intending visitors should communicate with Dr. Carron de la Carrière, 2 Rue Lincoln, Paris (8me), giving their names, addresses, the name of the railway station from which they will start, and, in the case of foreign visitors, the name of the frontier station by which they will arrive. Names cannot be received after August 15th. The subscription of 250 francs (£10), covering all the expenses of the excursion, should be paid to the Director of the Crédit Lyonnais, Agence B, Compte V.E.M., Place de la Bourse, Paris.

[1] Berliner Klinische Wochenschrift, 1895.

RADIO-ACTIVITY IN RUSSIAN MUD BATHS.

AT a meeting of the Physical Section of the Russian Physico-Chemical Society on May 24th Professor I. I. Borgman gave a report on the results of his inquiry on the radio-activity of certain Russian mud baths. The lecturer demonstrated on a screen. He had found that the mud baths of Kuyalnitsk and Arensburg possess radio-activity, whilst those of Berdyank and Saska possess this quality only to a very limited extent. But samples from other baths showed no signs of it. His systematic tests began on March 17th and continued right on till May. Some of the effects observable were that the sulphuric acid that served to dry the mud of the Kuyalnitsk baths as well as the vessels and other objects that had been in contact with it had acquired the radio-active property. Professor Borgman had sent a sample of the mud bath of Kuyalnitsk to Dr. London who tested it for bacteria and found that it arrests the growth of bacteria. It seems probable that radio-emanations are ubiquitous and more than a year ago Professor J. S. Thomson of Cambridge found evidence of them in ordinary drinking wells and in the earth. More recently the same property has been found to reside in the thermal waters of Bath and Buxton, while Droitwich brine is also radio-active. The subject is still steeped in obscurity but it is not improbable that radio-activity may be found to be a factor of considerable importance in hydrotherapeutic practice. It may be concerned in the beneficial effects of a mud application. All muds are not curative, neither is it probable that they are all radio-active or inhibitory to the growth of micro-organisms.

HIS MAJESTY THE KING has graciously consented to lay the foundation-stone of the new buildings of St. Bartholomew's Hospital during the course of next month.

THE Cavendish lecture of the West London Medico-Chirurgical Society will be delivered by Professor von Mikulicz of Breslau on Friday, June 24th, at 8.30 P.M., in the Town Hall, Hammersmith. The subject is, Experiments on the Immunisation of Operation Wounds. A conversazione will follow.

AT the annual meeting of the Incorporated Medical Practitioners' Association, held on June 2nd, Mr. Robert Ambrose, Member of Parliament for the Western Division of County Mayo, was elected president for the ensuing year.

CARDIFF INFIRMARY.—The committee of the Cardiff Infirmary Sunday Fund announces that as a result of the collections on "Infirmary Sunday" (April 24th) the sum of £590 has been handed to the institution. The committee, however, will keep the fund open until Dec. 31st so that any congregation which had not been able to arrange for a collection on April 24th may have an opportunity of doing so.

Looking Back.

FROM

THE LANCET, *SATURDAY*, June 10, 1826.

DR. HOPE AND HIS LECTURE TO THE LADIES OF EDINBURGH.

THE fifteenth day of February of the present year will be long considered a remarkable era in the history of the modern Athens. For the first time, we believe, that any thing of the kind has been attempted in Europe, the splendid portals of the University of Edinburgh were thrown open to the fair sex, and they were permitted to approach the pure fountain of science, and sip a little of its refreshing streams. On that memorable day Dr. HOPE, the Professor of Chemistry, commenced a popular course on that fascinating subject. That learned lecturer has been long celebrated for his oral instruction, but still more famous for his showy experiments exhibited to the grown-up children of the male sex, whose admiration and wonder have been often excited by his Breslaw or Boaz-like dexterity.

Last year his excellent friend and able colleague, Mr. Leslie, condescended to withdraw his attention for a little from his profound speculations on radiant heat, or from the study of the Hebrew language, in which he is so deeply skilled, and astonished the ladies with the wonderful powers of the magic lanthorn and the solar microscope, and while they were glowing with admiration, he cooled their ardour by producing, in a moment, a mountain of ice. Pondering on this extraordinary feat, the learned Professor of Chemistry determined to enter the list of honourable rivalship; and having consulted his honourable patrons, the Lord Provost and Magistrates, on the propriety of this plan, received their unqualified approbation, and announced his intention to the citizens at large. By the way, is this not a direct acknowledgment of the right of the Magistrates of Edinburgh, as patrons of the University, to regulate its affairs, a subject in course of litigation, we understand, in the courts of law, and to which we shall probably soon direct our attention.

The news of the proposed lectures flew on the wings of the wind; and the ladies were delighted to find that they were on the eve of emancipation and were to be entirely relieved from the antiquated shackles, almost indeed corroded with rust, with which they had been long fettered. Dresses, parties, and balls were no longer heard of; the tongue of scandal was silent; chemistry, chemistry and *Hope*, was in every one's mouth, and to be admitted within the walls of the famed University was quite ravishing! The long expected day at last arrived: coaches and chaises, gigs and curricles, were all in requisition. Prince's-street, the fashionable winter promenade of the beaux and belles of the modern Athens, was deserted; the shops of the milliner and silk mercer were abandoned; the voice of the auctioneer was addressed to empty benches, and the strokes of his hammer resounded from the walls of a vacant room. Attracted by the novelty of the exhibition, a dense current of vehicles was seen flowing from North to South before the hour of two o'clock; and as they drew up before the noble portico of the College, and attempted to enter it, what was their surprise and astonishment to find that admission, by the usual approach, was refused; and being ordered to move round to the South side of the edifice, their surprise was not diminished when it was perceived that they must enter the seat of learning by a *window*.[1]

Conversion extraordinary of the Royal College of Physicians at Edinburgh into a Soho-square Bazaar.

THE splendid hall of the Royal College of Physicians in George-street, was opened a few weeks ago, under the auspices of that learned body, as a Bazaar, in which was exhibited an extensive and varied collection of children's frocks, work-baskets, fire screens, caps for dress and undress, child's dolls, pincushions, confectionary, and numerous other articles suited to the taste or agreeable to the palate of an immense crowd of every rank, sex, and age, which the novelty of the scene had attracted to the spot. A brisk sale continued for some hours and we understand that the whole stock was bought up.[1]

[1] Excerpts only have been transcribed.

THE WATERS OF CHÂTEL GUYON.

BY SEYMOUR TAYLOR, M.D. ABERD., F.R.C.P. LOND.,
PHYSICIAN TO THE WEST LONDON HOSPITAL.

IT may interest some of the many readers of THE LANCET to read an account of the above-named health resort and its medicinal waters. I visited Châtel Guyon in the summer of 1902 and I was so much struck with the potentialities of the place that I was prompted to lay before the profession the advantages which sufferers from certain diseases, especially from gastro-intestinal disorders, might derive from a course of the waters there.

Châtel Guyon is comparatively unknown so far as the British public are concerned. Our patients are sent more frequently to Vichy, to Royat, to Mont Dore, to Plombières, or to la Bourboule; whilst Châtel Guyon in the immediate vicinity has been overlooked, notwithstanding that its waters are at least as efficacious as those of its neighbours if not more so. On the other hand, the French and Italians, as well as the people of other nationalities, know the value of its springs and its climate, and patients suffering from certain definite groups of diseases resort there in large numbers for restoration to health. There is even local evidence that the value of its springs was not unknown to the Romans.

The small town of Châtel Guyon is situated in Puy-de-Dôme, Auvergne, at an altitude of about 1500 feet above sea level. The nearest railway station is Riom (on the Paris-Lyon-Méditerranée Railway) about four miles away, whence a good service of omnibuses and carriages conveys visitors through a charming series of vineyards to Châtel Guyon. Riom itself is about eight hours from Paris.

Châtel Guyon consists of two separate portions, an old town and a new town. The former nestles round the side of a high hill quite apart, and its inhabitants are for the most part concerned in agriculture. The new town has sprung up in recent years on the banks of a mountain stream (Sardon) which is largely augmented by the springs which boil up from its bed. In this new town only are found the various springs, baths, and other establishments which require description.

The season extends from May to September inclusive. The best months are July, August, and September. During these months the climate is bland yet invigorating. July is the warmest month but the daily mean variation in temperature only ranges between 55° F. in the early mornings of September and 78° at midday in July. The valley is sheltered from violent winds by vineclad hills, and thunderstorms, though not unknown, are rare and of short duration only. The soil is dry and permeable, there are no stagnant pools as no water collects, and after the heaviest rains the roadways are dry in a few hours.

There are more than 20 springs in Châtel Guyon and many more which could certainly be used with profit are manifest in the bed of the river. Others have doubtless to be discovered. The principal springs or "sources" are named Gubler, Marguerite, Yvonne, and Deval, and although these vary slightly from one another in their physical and chemical qualities I doubt if there is so much difference in their action as to call for special comment. The following characteristics therefore may be regarded as practically common to all.

The water rises up in the basins at a temperature of from 76° to 100°, bubbling and effervescent, with intermittent larger escapes of gas. It is clear, limpid, of slightly acid reaction, odourless, and by no means disagreeable to drink, a slight saline astringent taste being due to iron in solution. It reminds one of draught of flat, warm soda-water. Indeed so palatable is the water that it is freely drunk by the inhabitants in order to quench thirst. The chemical composition of the waters, as will be seen from the following table, shows that they are extremely rich in sodium chloride, magnesium chloride, and also in calcium bicarbonate, with free carbonic acid

gas. The quantities are stated according to the metric system of measurement.

	Grammes per litre.
Chloride of sodium	1·6
,, magnesium	1·5
Bicarbonate of calcium	2·1
,, sodium	1·0
,, iron	0·06
,, lithium	0·01
,, potassium	0·2
Sulphate of calcium	0·5
Free carbonic acid gas	1·1
Silica	Trace.
Arsenic	Trace.
Total	8·0

This table shows that the two chlorides which are the most important ingredients are present in the waters to the extent of, roughly, 0·63 grain per ounce. The chloride of magnesium is the most important ingredient and is probably unequalled in quantity by any other known European spring. In fact, it is perhaps the only natural water in which iron, magnesium chloride, and free carbonic acid gas exist together. I know of no other European spring which affords such a large percentage of magnesium chloride, and this property alone should make Châtel Guyon a famous health resort. The temperature of the different springs, however, varies considerably between the 64° of the Source Romaine, which is not much used, and the 95° of the Source Yvonne. The specific gravity of the waters is about 1004 and the quantity issuing from the various springs has been computed at about 500,000 gallons a day, and with this abundant supply it is obvious what a large number of visitors might receive the benefits of the waters, not only internally but in the form of baths. Indeed, the free supply of water fresh from the springs to the bathing establishments is one of the greatest desiderata in the treatment of the various patients who visit this health resort.

The experiments and researches carried out by Sir Lauder Brunton, Laborde, and others show that chlorides, whether of magnesium or of sodium (and the waters of this spa are essentially of this class) increase the activity of the muscular tissue of the empty viscera and of the secretions of the gastro-intestinal canal, as well as of those accessory glands which pour their secretions into it. These salts also exert a direct action on the involuntary muscular tissue, so that the gall bladder and biliary passages contract more vigorously and the more effectually discharge their contents. Hence this effect on the intestinal tube is slightly purgative at the time these waters are being taken, an effect which is not transitory but lasts for a varying time after they have been discontinued. A similar tonic effect on the muscular tissue of the heart is also most noteworthy and is spoken of later.

The waters, as may be inferred, are either (1) drunk, or (2) used for bathing purposes, or (3) used for the irrigation of the stomach, of the larger bowel, or of the vagina, according to the various maladies for which they are prescribed.

1. When taken by the mouth the quantity usually ordered by the local medical man is from half a pint to two pints per diem. When taken in this quantity they are found to restore the muscular tone to the stomach and the intestinal canal and to increase the various secretions which are poured out into this large area and also those of the liver and the pancreas. From the consequent augmented flow of bile and of pancreatic juice the bowels are freely evacuated though never purged and the intestine is in a measure disinfected. Consequently one meets at the various springs patients who have been sent to Châtel Guyon suffering from gout, plethora, habitual constipation, dyspepsia, and atony of the bowels. They include, on the one hand, people who have probably indulged too freely in the pleasures of the table, and, on the other hand, those patients whose sedentary occupations predispose to obesity and whom we send to Carlsbad or to Harrogate. In larger doses (from two to three pints daily) the waters are distinctly purgative. But the effects of these waters are by no means limited to the alimentary system. They produce great changes on the urinary tract. Indeed, from personal experience I am inclined to think that their action on the urinary system is their most marked feature. After a course of the waters not only is the desire to micturate increased but the expulsive power of the bladder is restored, the quantity of urine is greatly increased, its specific gravity is diminished, apparently by cleansing the system of any accumulation or any excess of uric acid and urea, whilst the chlorides are diminished. In addition, I learned from the notes of our medical *confrères* practising in the town that albuminuria is lessened, especially that form which is secondary to diseases of the heart and lungs. These beneficial results would appear to be due principally to the tonic action of the waters on the involuntary muscular system. They have also marked effects on the cardio-vascular system. Not only are the cardiac centres stimulated but the heart muscle itself is strengthened and the systolic thrust is made more vigorous, whilst the pulse-rate is slightly accelerated and its tension is increased. Hence all forms of œdema, and also albuminuria, due to cardiac defects, especially such as are secondary to dilatation of the heart or degenerative changes in its muscular walls, derive extreme benefit from a course of the waters. Indeed, I was so much struck with the potentialities of the springs in this direction that I have suggested to the authorities that they should, under the supervision of the local medical practitioners, train male and female attendants in the methods of administering the graduated exercises which are practised with so much success at Nauheim, Harrogate, and other spas.

2. The baths are also excellent. The original baths situated near the casino are being renovated and replaced by more modern apparatus so as to bring the treatment by balneological therapeutics thoroughly abreast of the times. The bath receptacle itself is of the ordinary shape but of somewhat cold appearance owing to the slight coating of iron oxide which is deposited by the water. Each bath holds about 500 litres or about 100 gallons. The water flows direct from the springs and if necessary its temperature can be raised, but the best effects are probably produced by the water in its virgin state. It flows freely through the bath which is thus practically renewed every four minutes, and hence the bather obtains the full results of the heavy charge of the principal constituents—namely, the chlorides, bicarbonates, and the free carbonic acid gas. On entering the bath the first sensation is rather depressing; this, however, speedily gives way to one of agreeable pleasure as the temperature of the water (33·5° C. = 92·3° F.) is that of a "warm bath." It also affords a peculiar and characteristic oleaginous or velvety sensation to the skin and one feels as though one could easily float on the surface. After reclining a few minutes it is found that innumerable small bubbles of carbonic acid gas have adhered to the surface of the body, and these, increasing in size by amalgamation, finally become detached and rise to the surface. The effect of all this is to produce vaso-motor action. The capillaries are dilated and there is a sense of general warmth. This is more especially noticed on emerging from the bath after 20 minutes' immersion, when the skin is reddened and there is a feeling of warmth and glow. But above all is the agreeable sensation of increased bodily activity and elasticity. A walk which prior to the bath would have seemed to be irksome is now taken with spirit and eagerness, whilst any previous oppression, or tiredness, or dyspnœa due to any exertion entirely disappears. The muscular system, both voluntary and involuntary, is braced up; there is an increased secretion from the kidneys and micturition is performed with vigour. The pulse is also increased in volume and tone.

3. In the higher part of the valley a new establishment has been built where, under the care of skilful and highly trained attendants, massage, rectal irrigation, and lavage of the stomach are administered. In the women's department, which is quite isolated and distinct from the male section, there are skilled masseuses who carry out vaginal or rectal douchings which may have been ordered by the physician. From all accounts that I could gather lavage of the stomach is most efficacious in those cases in which dilatation is secondary to fermentation and other effects of bacteria. The carbon dioxide would appear to exert an antiseptic effect on the mucosa of the stomach, the secretion of the gastric juice is increased in quantity, in acidity, and in activity, whilst the appetite is markedly improved. Chronic cases of atonic dyspepsia appear also to derive extraordinary benefit. Irrigation of the colon is performed in a scientific method which is seldom practised in this country. The water is allowed to pass into the bowel slowly and continuously by force of gravity and measurements are carefully recorded and strictly adhered to according to the physician's directions. If one may judge by the notes readily afforded me by the medical men practising at the spa and also by the large

number of visitors, rectal irrigation would appear to be most useful in those sufferers from corpulence and plethora in whom atony of the lower bowel is a distressing symptom. The local effect of these waters not only increases the natural expulsive power of the rectum but augments the circulation of the bowel generally, and is therefore especially useful in hæmorrhoids and in rectal (benign) ulcers. On the other hand, patients suffering from appendicitis run some risk apparently if they are subjected to rectal lavage at Châtel Guyon. Many cases even during the suppuration stage are sent to Châtel Guyon for cure, a step obviously fraught with danger. Cases even in the subacute stage run some risk and their advent is discouraged by the local physicians. I am not satisfied as to the action of the waters in appendicitis but it is evident that in many instances abscess rapidly forms, calling for urgent surgical treatment. Possibly the strong peristalsis which is set up by the water may stimulate renewed activity in the cæcum and appendix. It cannot be too strongly insisted that cases of appendicitis can only be sent to this spa after most careful consideration when active inflammatory trouble has long since passed away, and even then they should not be sent to Châtel Guyon with the idea of effecting a cure from the use of the waters. On the other hand, patients suffering from that obstinate disorder membranous colitis appear to derive the greatest benefit from treatment at this resort. The careful irrigation of the large intestine which is so systematically carried out there appears to produce excellent results. The topical action of the water would appear to produce antisepsis of the contents of the bowel and to increase its muscular tone.

Finally, the hotels are good and there are excellent apartments for those visitors who require privacy.

MEDICINE AND THE LAW.

The Case of Frank Rodgers.

A FEW weeks ago a shocking tragedy in Cambridgeshire attracted considerable attention owing to facts which were indisputable. A boy, 15½ years of age, intentionally shot and killed his mother. She was a drunkard who was intoxicated when he murdered her and he said when he was arrested that he had done it for the sake of his sister. There could therefore be no doubt that the mother's habits and the unhappiness and disgrace in which they involved her family had preyed upon the boy's mind, that he had formed the idea that to take her life would be an effective method of removing her and of thus benefiting his young sister who, as a boy of nearly 16 years of age would no doubt bitterly feel, must suffer from the presence and example of such a mother. He accordingly fired at her with a revolver well knowing what he was doing and having an object in view in doing it. In these circumstances there could be no dispute as to the act being murder or as to it having been committed by the prisoner, so that the only question which the jury at the recent Cambridge assizes had to consider was with reference to the state of the poor boy's mind when he aimed the fatal shot. There was nothing in his youth to excuse him and every person tried for crime is presumed to be of sound mind until the contrary is proved on his behalf. The evidence elicited on behalf of young Rodgers from the witnesses for the prosecution who were aware of the history of the family was to the effect that the boy was naturally an affectionate son and fond of his mother, that he had grown rapidly and was anæmic, and that he suffered from headaches and bleeding at the nose. It was also proved that his mother's intemperance had caused him acute distress and that her brother and uncle had been addicted to intemperance and had been insane. It was stated later in the case that her father had been intemperate. Medical evidence was given on the prisoner's behalf by Dr. R. Percy Smith and Dr. Charlton Bastian as to the result of their examination of him and as to the extent to which the family history referred to would predispose him towards mental unsoundness. Each of these witnesses admitted, what indeed was plain to all, that the boy knew what he was doing and meant to do it, but Dr. Bastian, in answer to a question put to him in re-examination, expressed the view that "the idea that he must put an end to the state of affairs at his home overrode all other considerations and prevented him from being able to tell right from wrong. There was an obsession of the prisoner's mind which warped it like a delusion." In his summing up Mr. Justice Phillimore appears to have said that "it was suggested on the prisoner's behalf that he acted under an uncontrollable influence and this was a defence of which medical men were very fond; but the jury should be on their guard against yielding to it in most cases." The precise meaning of medical men being fond of a particular line of defence is not clear. Medical witnesses give evidence of what they believe to be the fact with regard to a prisoner's condition and it is then for the judge to direct the jury as to whether the condition thus indicated constitutes such insanity in point of law as will entitle the prisoner to be held irresponsible for his crime. The learned judge added, however, that other circumstances proved were in favour of the view that the prisoner did not know the nature and quality of his acts, these being his family history, his physical health, his rapid growth and weakness, his headaches, his bleeding at the nose, and his morbidness and languor shortly before the crime was committed. The jury found that the prisoner was guilty but was insane when he committed the crime, a verdict which was fully justified by the facts, and which might have been expected to be found in such a case upon less convincing evidence. The reports of the trial do not mention whether any observation was made at any time as to the presence of the revolver in the prisoner's home. Apparently it was borrowed from his brother and a more undesirable possession for a boy than a revolver it is difficult to imagine. In a house where one of the inmates is a drunkard or not of strong mind it is still more dangerous. There is an Act of Parliament which regulates the sale of revolvers but to what extent it is enforced actively throughout the country it is not easy to say. Crimes committed with the cheap pistol are still frequent and prosecutions connected with infringements of the Act, if they occasionally take place, are but rarely reported in the newspapers. And yet the Act provides the police with powers the exercise of which should tend to the prevention of crime, and although far from perfect it is by no means deserving to be neglected. In the absence of a pistol it is quite likely that young Rodgers would never have conceived, or would have been unable to carry out, his insane intention of ridding his family of the mother by depriving her of her life.

ASYLUM REPORTS.

Glasgow Royal Asylum, Gartnavel (Annual Report for 1903).—The average number of patients resident during the year was 441, comprising 184 males and 257 females. The admissions during the year amounted to 154—viz., 71 males and 83 females. Of these 122 were first admissions. Dr. Landel R. Oswald, the medical superintendent, states in his report that the number of the admissions was the largest recorded for some years. All were private patients and 22 sought treatment voluntarily. Alcoholic excess was a prominent factor in the production of the insanity of a large proportion (29) of admissions, but other causes, such as the climacteric and adolescent periods of life, accounted for 17 cases and senile decay for six. A hereditary tendency to insanity or nervous disease was ascertained to be present in the largest proportion of cases (44 in number), "though it probably existed in a larger number though not so admitted by the relatives" of the patients. "I do not wish," continued Dr. Oswald, "to minimise the gravity of the fact that alcoholic excess is year by year being the direct cause of more and more insanity, that organic brain disease is becoming more frequent, and that old age is now, as never before, accompanied by such mental symptoms as to make asylum treatment necessary for the patient's safety; but it is obvious that to solve the problem of the prevention of insanity and the consequent reduction in the number of the insane, we must go further back and eradicate or modify the tendencies that lead to it, whether these are inherited or are acquired in childhood or early life. ..... No one can work amongst those who are the subjects of mental disorder without thinking deeply and often on this subject of the prevention of insanity, and no one can see much of the child life in the poorer parts of a large city without believing that the possibility of the prevention of insanity might be largely brought about by influences brought to bear on them, I believe by their physical and mental education.

..... The education to which I refer must be based on the study of the individual, it must take a large view of the physical as well as of the mental constitution of the child, and it must do so specially when such a child is known to have inherited or acquired a tendency to brain disease." The mental condition of suspected children should be ascertained periodically. The brains of neurotic children are in school life over-stimulated and thereby ultimately weakened. The number of patients discharged as recovered during the year amounted to 53—viz., 23 males and 30 females, or 12 per cent. of the average number resident. The deaths during the year amounted to 30, or 6·8 per cent. as calculated on the same basis. Of the deaths three each were due to senile decay, bronchitis, renal disease, and pulmonary tuberculosis, two to general paralysis of the insane, and the rest to other causes. The Commissioners in Lunacy state in their report that the asylum was in excellent order, that every section of the building had a clean, bright, and well-furnished appearance, that the detached cottages were home-like in their arrangements and afforded most satisfactory accommodation for a selected class of patients, that the patients were evidently managed with consideration and kindliness, that their mental and bodily condition was carefully studied and their individual requirements liberally met, and that the medical registers and case-books were found to be kept regularly and correctly. The committee of management states in its report that "no application for admission even at the lowest rate of board (if the patient was considered a suitable case) was refused during the year. ..... The directors desire it to be known to the medical profession that they are willing, through the physician superintendent, to favourably consider the admission for a limited period, at rates under the lowest fixed amount of £40 per annum, of cases of acute and recent mental illness" of members of the poorer classes.

Derby Borough Asylum (Annual Report for 1903).—The average number of patients resident during the year was 323, comprising 145 males and 178 females. The admissions during the year amounted to 86—viz., 42 males and 44 females. Of these 71 were first admissions. Dr. S. Rutherford Macphail, the medical superintendent, states in his report that "the best test of the increase or decrease of insanity in a district is to take the cases occurring for the first time in each year and to exclude all readmissions. Analysing the admissions from Derby Union for the last three quinquennial periods from this standpoint we find that the average number of first admissions in 1889 to 1893 was 56, in 1894 to 1898 it was 57, while in 1899 to 1903 the average was 69. No doubt there has been a considerable increase of population in recent years and a large and populous area has been added to the borough of Derby in the last quinquennium, but this is not sufficient to account for an increase of over 20 per cent. of the first admissions. We are therefore forced to the conclusion that there is in the borough an appreciable increase of mental disease requiring asylum treatment." The mean age of the patients admitted was 41·5 years and six were over 65 years of age. As usual, nearly two-thirds of the admissions suffered from recognisable physical disease and only six were classified as in average health. Five patients were admitted in a critical and almost moribund condition, two of them dying within a fortnight and the other three in about a month. Hereditary predisposition and alcoholic intemperance were the two chief causes of insanity in the admissions. The number of patients discharged as recovered during the year amounted to 39—viz., 18 males and 21 females or 12·1 per cent. of the average number resident. The deaths during the year amounted to 37 or 11·4 per cent. as calculated on the same basis. Of the deaths two were due to pneumonia, three to pulmonary and other forms of tuberculosis, four to cardiac disease, seven to senile decay, nine to general paralysis of the insane, and the rest to other causes. No serious casualties or accidents have occurred during the year and with the exception of a few cases of influenza there has been no epidemic of infectious disease. The report of the Commissioners in Lunacy is not printed in the present annual report. The committee of management states in its report that the weekly charge of maintenance per patient was 11*s.* 1*d.* for borough patients and 14*s.* per week for out-borough patients. Private patients were charged at the rate of 17*s.* 6*d.* and 21*s.* weekly. The farm accounts showed a profit on the year's working of £252 11*s.* after deducting £147 13*s.* for rent, rates, and insurance.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

TUESDAY, MAY 31ST.

BUSINESS was resumed on Tuesday, Sir WILLIAM TURNER being in the chair.

Preliminary Scientific Committee.

On the motion of Sir VICTOR HORSLEY, seconded by Dr. MCVAIL, Mr. Jackson was added to the Preliminary Scientific Committee.

Education Committee's Report.

Sir JOHN BATTY TUKE moved the adoption of the report by the Education Committee, which was received and entered on the minutes on Saturday. He said this was the last report he would have the honour of signing as chairman of the committee and he begged to congratulate the Council and the committee on having obtained the services of Dr. Windle who was intimately acquainted with medical education in all its branches.

Dr. WINDLE seconded the motion. He said he could give some additional information as to the ages of the students. He found that the students entered in Birmingham during the last 12 years numbered 552. Of these 26 were under 17 years of age and 526 over. Two were under 16 years of age and of the 26 entered under 17 years of age it was interesting to note that 12 were qualified, 10 were on the way to qualification, whilst the others had given up study. Of the 526 over 17 years of age, 465 were over 18 years of age. The largest number entered at any age was 107 between 17 and 18 years of age and the oldest student was between 41 and 42 years of age. One of the two entered under 16 years of age went out to South Africa as a civil surgeon and wrote to say that he had achieved the ambition of his life in getting a hundred guinea fee for an operation. He was only 25 years of age. As to the section of the report headed "Conference with the Consultative Committee on School-leaving Examinations" he explained that the scheme was now in the hands of the Board of Education, which he hoped would deal with it without very great delay. He could not say anything about the details of the examination. Of course, it would be clear to the Council that the first effect would be to add another to the already long list of examinations, but it was hoped that the final result would be to clear out a great many examinations.

The report was adopted.

Report on Finance.

Dr. PYE-SMITH proposed that the report of the Finance Committee on the Council's income and expenditure for 1903 be received and entered on the minutes. He read the report which was as follows:—

The income of the General and Branch Councils for the year ending Dec. 31st, 1903, was	£8,200	10	7
The expenditure for the same period was	10,365	12	3
Consequently there is a deficit on the year's working of ...	£2,165	1	8

The receipts from fees show an increase of £106 5*s.* 6*d.*, the English Branch having received £143 7*s.* 6*d.* more, the Scottish Branch £99 8*s.* more, and the Irish Branch £136 10*s.* less; the General Council has received £78 less for colonial registrations, and the net increase, therefore, is only £28 5*s.* 6*d.*

It will be remembered that in July last the fees for the registration of additional qualifications and for restoration to the Register were raised from 5*s.* to £1. The result of this is shown in the following table:—

	1902. No. of fees.	1903. No. of fees.	1902. Cash received.	1903. Cash received.
			£ *s.*	£ *s.*
English Branch	569	596	142 5	284 5
Scottish Branch	158	152	39 10	112 5
Irish Branch	73	70	18 5	25 15
Total	800	818	£200 0	£402 5

The increased fee has only been in force for five and a half months, but it will be seen that the number of fees received is slightly larger than before, and the net result from the point of view of the Council's finances is certainly satisfactory.

The Irish Branch shows a decrease of 32 in the number of original registration fees received, but the English and Scottish branches show an increase of four and three respectively. The following items of expenditure call for explanation. (a) The increase of £181 8*s.* in General Council fees is due to the fact that the meetings occupied two days more than in 1902 and the new scale of travelling allowances.

which results in a saving of about £80 per annum, only came into force during the latter part of the year. There was again a special session, which cost over £700. The increase of £93 14s. in Executive Committee fees is due to the fact that the special session did not, as last year, coincide with the February meeting of the committee and the travelling expenses had therefore to be paid. (*b*) The increase of £124 13s. 7d. for printing of minutes and programmes is due to the number of inspection reports. Against this may be set the decrease of £60 19s. 6d. in the cost of miscellaneous printing. (*c*) The index to the minutes cost £105 for labour and £76 4s. for printing, making a total of £181 4s. The cost of the former index, published in 1887, was £311 17s. for labour and £283 5s. for printing, making a total of £595 2s. (*d*) The increase of £186 19s. 11d. in the cost of inspection of examinations is due to the larger number of these under review. Owing to the unfortunate illness and death of the inspector the series of inspections was not completed; thus the increase in this item is not so large as it would otherwise have been.

As to the income and expenditure of the three branch councils for the past three years, although no outlay was incurred by the expense of an election (£350), the deficit of the English branch is over £400 more than last year and the Scottish branch shows an increased deficit of almost the same amount; these are due to the heavy contributions called for by the General Medical Council.

The committee are pleased to note the reduction of £140 3s. 3d. in the office expenses of the Irish branch.

The excess of expenditure over income exceeds the average of the past five years by about £500, though the average has risen £200 since last year. It must be remembered that last year the Council received £400 for the surrendered sinking fund policy, which decreased the deficit by that amount. The percentage rate is 110·31; that is to say, the branches have had to pay the General Medical Council £110 for every £100 received and to meet their own expenses besides.

The Pharmacopœia accounts show that the balance of profit in hand is £613 15s. 4d., of which £500 has been lent to the General Medical Council at 3 per cent. interest. The stock in hand on which all charges have been paid will, if sold, add £912 12s. 2d. to the profits.

Irish Branch.—It may be assumed that unless the contribution to the expenses of the General Medical Council is again unusually heavy the expenses of the branch will be about £900; there is a balance of cash in hand of £80 and the receipts will probably be about £700. On this basis there will be a deficiency at the end of the year of about £120 and the committee therefore recommend that a grant of £150 be made to the funds of the branch.

Dental Fund.—The income exceeded the expenditure by £84 14s. 6d.

With regard to the current year the committee hope for a considerable reduction in the expenses unless there should again be a special session; the savings that may be looked for are as follows: On Council fees, £700; on printing, £100; on index, £180; and on the grant to the Irish Branch, £150; making a total of £1130, more or less. So that with care the deficit at the end of the year should not exceed £1000.

Dr. BENNETT seconded the motion which was agreed to.

On the motion of Dr. PYE-SMITH, seconded by Dr. MCCALL ANDERSON, a grant of £150 was made towards the expenses of the Irish Branch Council during the current year.

Election of a Treasurer.

Mr. Tomes was elected one of the two treasurers on the proposal of the PRESIDENT, seconded by Dr. PYE-SMITH.

Appointment of Committees.

The following committees were elected:—

The Finance Committee: The Treasurer, Sir Patrick Heron Watson, and Dr. Bennett.

Executive Committee: From the English Branch Council, Dr. Payne, Dr. MacAlister, Dr. Pye-Smith, and Mr. Tomes; from the Scotch Branch Council, Sir John Batty Tuke and Sir Patrick Heron Watson; and from the Irish Branch Council, Sir Charles Ball and Sir C. Nixon. The President is an *ex-officio* member.

Penal Cases Committee: From the Irish Branch Council, Sir C. Nixon and Sir W. Thomson; from the Scotch Branch Council, Sir Patrick Heron Watson and Dr. Finlay; and from the English Branch Council, Dr. Windle, [Mr. Tomes, Sir Victor Horsley, and Sir Hugh Beevor.

There was a tie in the voting for the Penal Cases Committee between Sir Hugh Beevor and Dr. MacAlister, but Dr. MacAlister retired.

Report of the Public Health Committee.

Dr. BRUCE moved the adoption of the report by the Public Health Committee. The report stated that having considered a communication from the Advisory Board of the War Office the committee had agreed to advise the Council to add to the present list of districts and commands recognised as suitable for the purpose of outdoor training in hygiene under Rule 3 (*e*) of the Council's resolutions and rules for diplomas in public health the following additional military commands—viz.: Madras, with a civil population of 72,000; Bengal, with a civil population of 38,000; and the Punjab, with a civil population of 42,000. The committee had also considered an application from Dr. Pinching, Director-General of the Sanitary Department of the Ministry of the Interior of Egypt, asking if the Council were prepared to recognise the Sanitary Department of Egypt as competent to issue the necessary certificates to army medical officers and others, required in Rule 3 of the resolutions and rules adopted by the General Medical Council on Dec. 2nd, 1902, and May 29th and Nov. 30th, 1903, for diplomas in public health. The committee recommended that this application should not be granted. The Sanitary Department of the Ministry of the Interior, Egypt, was not under the control of the Director-General of the British Army Medical Department and was in no sense comparable with the districts and commands as defined in Rule 3 (*e*) of the Council's resolutions and rules for diplomas in public health.

Sir CHARLES BALL seconded the motion which was agreed to.

Report of the Pharmacopœia Committee.

Dr. MACALISTER moved that the report of the Pharmacopœia Committee be received and entered upon the minutes. He read the document as follows:—

The Pharmacopœia Committee have to report that from Nov. 25th, 1903, to May 24th, 1904, the sales of the British Pharmacopœia (1898) were 606 copies and of the Addendum (1900) 130 copies. Thus up to May 24th, 1904, 35,197 copies of the Pharmacopœia (1898) and 4294 copies of the Indian and Colonial Addendum (1900) (including the Government of India edition) have been sold. The stock remaining in hand of the Pharmacopœia is 1834 copies and of the Addendum 2113. It will therefore be unnecessary to print a fresh issue this year.

The Executive Committee has referred to the Pharmacopœia Committee for consideration and report a memorial from the Decimal Association and other papers relative to the Weights and Measures (Metric System) Bill, which after amendment by a select committee has passed the House of Lords and is now awaiting consideration by the House of Commons.

The committee have also had before them the notice of motion on the subject which has been placed on the Council's programme by Mr. Jackson.

The committee are strongly impressed with the importance of bringing the weights and measures of the British Pharmacopœia into accord with the international system which is current in the pharmacopœias of all other countries. In the Pharmacopœia of 1898 what may be described as a transitional method was adopted. Doses were expressed in the familiar imperial system only, the directions for pharmaceutical processes in both the imperial and the metric system, and the directions for analytical operations in the metric system only. Were the metric system to become within a few years the one legal system employed in this country, the work of the committee would be appreciably simplified, though it would probably still be necessary to insert, in reference to dosage at least, equivalents expressed in the old imperial terms.

The committee are therefore of opinion that the Council may properly use its influence in favour of the legislation referred to in the memorial of the Decimal Association, and in the motion of which Mr. Jackson has given notice.

A report with reference to the tests for the detection of arsenic in the drugs of the Pharmacopœia prepared for the committee by Professor W. R. Dunstan, F.R.S., with the help of Mr. H. H. Robinson, M.A., has just been received and will receive careful attention.

The committee are also indebted to Mr. Tichborne for a number of valuable investigations on points of pharmaceutical chemistry which he has kindly undertaken at their request.

The committee desire to express their thanks to Dr. L. E. Shore of St. John's College, Cambridge, for an interesting and valuable addition to their library—namely, a copy of the Pharmacopœia Londinensis, 1651.

Sir JOHN MOORE seconded the motion. He considered that the Council should do everything in its power to facilitate the introduction of the metric system of weights and measures.

The motion was adopted.

The Metric System of Weights and Measures.

Mr. JACKSON moved:—

That the President (with the chairman of the Pharmacopœia Committee) be requested to inform the Lord President of the Privy Council that in the opinion of the Council it is desirable that after a sufficient period, to be fixed by law, the metric system of weights and measures should become the one legal system for the preparation and dispensing of drugs and medicines; that the Council would view with favour the passing into law of a Bill such as that now before Parliament entitled the "Weights and Measures (Metric System) Bill"; and that in that event the Council would be prepared to take all necessary steps to give effect to the law by making the proper modifications in the British Pharmacopœia.

He said that this country was behind most of the civilised countries in adopting a system of metric weights and measures. The adoption of the metric system would facilitate the teaching of arithmetic in the schools and would save much of the time which could be better devoted to other subjects. This was the testimony of schoolmasters to whom inquiries had been addressed. Such a distinguished man as Lord Kelvin had said in the discussion on the Metric Bill in the House of Lords that the time had come for compulsion in this matter. Some people had said that it would be a long time before the English people would become accustomed to the new system, but he understood that in Germany the people soon got accustomed to it. He did not think that there would be any great danger of confusing "grains" and "grammes" if it were adopted here.

Mr. TICHBORNE seconded the motion. There were two difficulties in connexion with the introduction of the metric system in England. It was the introduction of the international metric system that was proposed, not a metric system based on native measures. The other difficulty was the dose, but he thought that these difficulties would be overcome.

The motion was carried unanimously.

The PRESIDENT: Steps will be taken to communicate this motion to the Lord President.

Report of the Dental Education and Examination Committee.

On the motion of Sir CHARLES BALL, seconded by Dr. LINDSAY STEVEN, the report of the Dental Education and Examination Committee was received and entered in the minutes.

The report contained an allusion to the serious illness of the chairman of the committee, Mr. Tomes, which prevented him from attending it this session.

The first recommendation in the report was:—

1. That the application of Mr. Edward Barton Roper for registration as a foreign dentist, under the provisions of Section 10 of the Dentists Act, 1878, be not acceded to.

It was explained in an appendix to the report that Mr. Roper is a dentist of British nationality, but domiciled in France, who has obtained the diploma of Chirurgien Dentiste after three examinations.

Sir CHARLES BALL, in moving that the recommendation of the committee be adopted, said that this case opened up a very large question whether the French curriculum was comparable with those which they had already accepted. There was not sufficient evidence before the committee on that question. It also opened up the legal question of reciprocity. In the absence of Mr. Tomes the committee therefore recommended that the application should not be granted.

Dr. LINDSAY STEVEN seconded the motion and the recommendation was unanimously adopted.

Sir CHARLES BALL moved another recommendation of the committee:—

That the application of the Dental Board of Victoria for the recognition of the Diploma of Licentiate of Dental Surgery of Victoria be not acceded to.

He said that the committee in examining this application saw that the Dental Board of Victoria fulfilled pretty well the requirements of the Council with one important exception. That exception was that it did not require any evidence that a candidate had been instructed in clinical medicine and surgery. There were lectures on the subject at the dental school, but it was quite clear that a student could obtain its diploma without having seen any other patient but a dental patient. It had been represented to them that this would probably be remedied in future, but in all the circumstances the committee could not recommend the Council to grant the application.

Dr. LINDSAY STEVEN seconded the motion and the recommendation was agreed to.

Dentists and Joint Stock Company Registration.

Sir CHARLES BALL moved:—

1. That copies of the judgments in the cases O'Duffy *v.* Jaffe, Surgeon Dentists, Limited, and the King (Rowell) *v.* Registrar of Joint Stock Companies, together with the following resolutions of the General Medical Council, be sent to the Lord President of the Privy Council for his information.

2. That, in view of the judgment of the Chief Baron Palles, the General Medical Council hope that the Government will take such steps as may be necessary: (a) To restrain the Registrar of Joint Stock Companies from registering any new company unlawfully using the term dentist or any similar title which would be likely to lead the public to believe that the members of such company were registered dentists when such is not the case. (b) To prevent companies already registered from continuing unlawfully to use the term dentist or any similar title which would be likely to lead the public to believe that the members of such companies were registered dentists when such is not the case. (c) To in like manner prevent the use by companies of unlawful titles which would be likely to lead the public to believe that the members of such companies were registered medical practitioners when such is not the case.

In submitting this motion Sir Charles Ball said that these decisions had raised questions of great importance to the medical profession as well as to the dental. Under the Dental Act it was held that an unqualified person could not adopt the title of dentist, but in order to obviate this difficulty a number of companies were formed and registered under the Joint Stock Companies Act. The Dentists' Association of Ireland wishing to try a test case of this kind took proceedings against Jaffe and Company, a registered company carrying on business at Limerick. The case was ultimately taken to the King's Bench Division and the decision was that a company not being a person within the meaning of the Act could not be prosecuted for using the title of surgeon dentists. As might be expected this was followed by a large increase of these companies in Ireland. The Board of Trade began to think that this was a serious matter and it suspended the registration of these companies. There was a gentleman named Rowell who felt aggrieved at this action and he therefore applied for a mandamus against the registrar of joint stock companies in Ireland to compel the latter to register his company. The Board of Trade said that it would be bound by any decision which the court arrived at. But even while the case was under discussion the Board of Trade, as he was told, was advised by the law officers of the Crown in Ireland that the decision that a company was not a person within the meaning of the Act was a right decision, and judging by the lists of companies that were being formed the Board of Trade appeared to have resumed the registration of these companies even before the decision in the Rowell case. Sir Charles Ball read a large number of extracts from the decision of Chief Baron Palles in this case in which the latter said: "As the aid of this court and of the prerogative writ of mandamus cannot be granted for the purpose or with the effect of perpetrating a fraud this application ought to be refused and, of course, refused with costs." In conversation with one of the officers of the Crown who took an interest in this matter he distinctly stated that there was not the slightest difficulty in putting an end to all this trouble without legislation if the Board of Trade were to refuse to register any companies in which untrue terms were included. However, there were companies in existence and this was the method which he suggested to stop it. The use of these terms was likely to defraud the public and to make them believe that the companies were registered dentists. When that was not the case they could be enjoined at the suit of the Attorney General to stop making use of these terms. He thought that the Council ought to ask the Government to take this step. This matter affected the medical profession in the same way as it affected dentists and he thought that the Board of Trade should not be allowed to register companies as "medical." The Rowell case, he understood, had not been made the subject of appeal to the House of Lords and therefore the decision did not apply to England and Scotland. He was informed, however, that it would receive consideration in similar cases arising in England and Scotland. If the decision were overridden by the House of Lords then legislation might be necessary.

Mr. TICHBORNE seconded the motion which was unanimously carried.

The Medical Act Amendment Bill.

A communication from the Privy Council as to General Laurie's Bill to amend the Medical Act, 1886, was received and entered upon the minutes.

It was agreed to intimate to the Lord President of the Privy Council that the Council would welcome such a change as would facilitate the application to Canada of the provisions of Part 2 of the Medical Act of 1886.

Canvassing for Medical Clubs.

Dr. LINDSAY STEVEN moved:—

That it be remitted to the Executive Committee to consider and report to the next session of the Council upon what should be regarded as systematic canvassing on behalf of a medical practitioner for subscribers to a medical club instituted by himself and involving the employment of a paid collector of the entry money and the subscriptions to the club, which would be looked upon by this Council as constituting the practitioner so acting to have been guilty of infamous conduct in a professional respect.

He said the function of the Council was not only to regulate the education of the profession but also to guide its ethics. If the Council formulated a resolution similar to that which it formulated on medical associations and on unqualified assistants for the guidance of the profession he thought it would be a great advantage.

Mr. BROWN, in seconding the motion, said there were numerous private medical clubs and medical men were very much afraid to send out a collector to collect the fees which must be necessarily collected in many cases from patients who resided at a considerable distance from the surgery. It was not the intention of the Council to suppress the existence of clubs. They had existed beyond the memory of man and they discharged a very useful purpose in society. Although

the difficulties were great they ought to face them and form some sort of regulation which should be a guide to medical men in this matter.

Dr. MACALISTER said there was one thing that should make the Council pause before issuing a definition of an offence. In the case of covering and medical aid it was after a long series of particular trials that they summed up their experience and adopted resolutions. If they now formulated a definition of the kind of canvassing which was unprofessional and bad they might very well miss out what might happen in the next case. They had better wait before fixing a hard and fast rule which might be got round by the ingenious.

Dr. LINDSAY STEVEN agreed that it might be better to wait and he withdrew his motion for the present.

Issue of Medical Certificates.

In the absence of Sir Victor Horsley Mr. JACKSON moved:—

That No. 8 of the minutes of the Executive Committee of May 24th, 1904, be referred again to the committee in consultation with the legal advisers as to the action to be taken in regard to the issue of medical certificates contrary to the provisions of the Medical Acts.

The minute of the committee had reference to a communication from the Medico-Political Committee of the British Medical Association forwarding a communication from the education committee of the borough of Bootle in regard to the giving of a medical certificate by a local chemist and druggist in the case of a girl unable to attend school. The committee resolved that the Medico-Political Committee of the British Medical Association be informed that on the face of it the certificate forwarded to the Council appeared to be invalid under Section 37 of the Medical Act, 1858, and that the Council had no jurisdiction over chemists and druggists who gave invalid certificates.

Dr. BRUCE seconded the motion.

Dr. NORMAN MOORE said it was not in the power of the Council to do anything and the Executive Committee ought to be supported in its decision.

Dr. MACALISTER said that when the committee discussed this matter the legal officers were present. The question was entirely a legal one and no action could be taken without a new Act of Parliament. There was no medical question involved.

Mr. JACKSON remarked that they might bring it under the notice of the Central Board of Education.

Sir PATRICK HERON WATSON thought this was a matter of common law.

On a show of hands the motion was defeated.

County of Durham Medical Union.

The Council considered a communication from the County of Durham Medical Union asking if the Council would consent to receive a deputation from the union to lay before it some of the difficulties experienced by the union in its dealings with medical men who did not behave in a professional manner.

Dr. MACALISTER said the Business Committee had left this matter for the Council to decide. He moved that the President of the County of Durham Medical Union be informed that the Council would be prepared to receive a written communication from that body in respect of the difficulties to which it referred and the Council would then be in a position to decide whether any further conference was necessary. He said that deputations were always difficult and not always satisfactory and it was to the advantage of both bodies that the Union should have the opportunity of putting its case in precise language.

Dr. NORMAN MOORE seconded the motion which was agreed to.

Reappointment of Registrar.

The PRESIDENT moved the reappointment of Mr. H. E. Allen as general registrar. He said they all knew from many years' experience, and perhaps no member better than himself, the admirable qualities of Mr. Allen.

The motion was agreed to.

Length of Speeches.

Dr. PAYNE intimated that next session he would move that in order to economise the time of the Council it is desirable to place a limit on the length of speeches of individual members.

Notice of Complaint against Practitioners.

Sir WILLIAM THOMSON moved that it be remitted to the Executive Committee to consider and to draft an instruction to the Penal Cases Committee to ascertain in each case from the person or persons who have lodged a complaint against a practitioner whether the complainant or complainants have brought under the notice of the practitioner charged their disapproval of his conduct. He said the motion had reference to an incident which had occurred in a case the other day.

Dr. M'VAIL seconded the motion which was unanimously agreed to.

This concluding the public business,

Dr. NORMAN MOORE, in moving a vote of thanks to the President, said they all offered their warmest thanks to him for his conduct in the chair throughout the session.

Sir WILLIAM THOMSON seconded the motion which was agreed to.

The Council conducted some further business *in camerâ* and the proceedings of the session terminated.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF MEMBERS OF COUNCIL.

ON Thursday, July 7th, the Fellows of the Royal College of Surgeons of England will meet to elect three Fellows to fill the vacancies in the Council occasioned by the retirement in rotation of Mr. Thomas Bryant, the resignation of Mr. T. Pickering Pick, and the death of Mr. T. R. Jessop.

The following list of the members of Council gives the date at which each member will retire. The date of the first election is given in every case in which the member has been elected to the Council more than once.

Retire in 1911: Mr. H. T. Butlin, St. Bartholomew's Hospital (first elected 1895); Mr. G. H. Makins, St. Thomas's Hospital; and Mr. C. T. Dent, St. George's Hospital.

Retire in 1910: Professor Howard Marsh, St. Bartholomew's Hospital (first elected 1892); Mr. J. H. Morgan, Charing Cross Hospital; and Mr. H. H. Clutton, St. Thomas's Hospital.

Retire in 1909: Mr. A. W. Mayo Robson, Leeds Infirmary (first elected 1893); Mr. W. Watson Cheyne, King's College Hospital; and Mr. R. Clement Lucas, Guy's Hospital.

Retire in 1908: Sir Alfred Cooper (first elected 1892); Dr. J. Ward Cousins, Royal Portsmouth Hospital (first elected 1895); and Mr. A. Pearce Gould, Middlesex Hospital.

Retire in 1907: Mr. H. W. Page, St. Mary's Hospital; and Mr. C. W. Mansell Moullin, London Hospital.

Retire in 1906: Mr. F. Richardson Cross, Bristol Royal Infirmary; Mr. Henry Morris, Middlesex Hospital (first elected 1893); and Mr. John Langton, St. Bartholomew's Hospital (first elected 1890).

Retire in 1905: Mr. J. Tweedy, President, University College Hospital (first elected 1892); Sir Henry G. Howse, Guy's Hospital (first elected 1889); Mr. Edmund Owen, St. Mary's Hospital; and Mr. Rickman J. Godlee, University College Hospital.

Retires in 1904: Mr. Thomas Bryant, Guy's Hospital (first elected 1888).

We understand that at present there are seven Fellows who are candidates for the three vacant posts of the Council; they are in alphabetical order: Mr. H. Gilbert Barling of Birmingham, Mr. C. H. Golding-Bird of Guy's Hospital, Mr. A. A. Bowlby, of St. Bartholomew's Hospital, Mr. W. Bruce Clarke of St. Bartholomew's Hospital, Mr. Harrison Cripps of St. Bartholomew's Hospital, Mr. Frederic S. Eve of the London Hospital, and Mr. J. Bland-Sutton of the Middlesex Hospital. It is possible that there may be more candidates, for nominations can be received up to Monday next, June 13th. Nomination forms can be obtained from the secretary.

REVIVAL OF THE FELLOWS' DINNER.

It is intended to hold a Fellows' dinner on the evening of the day of election to the Council and it is hoped that it will serve as an occasion for the meeting of the Fellows, for since the introduction of voting by post for the Council the personal attendance of Fellows has greatly diminished.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 9279 births and 4277 deaths were registered during the week ending June 4th. The annual rate of mortality in these towns, which had been 16·1, 15·5, and 15·4 per 1000 in the three preceding weeks, further declined last week to 14·6 per 1000. In London the death-rate was 13·2 per 1000, while it averaged 15·2 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5·5 in King's Norton, 7·0 in Handsworth (Staffs.), 8·0 in Burton-on-Trent, 8·7 in Newport (Mon.), 9·0 in West Hartlepool, 9·4 in East Ham, 9·5 in Smethwick, 9·6 in Hornsey, and 9·9 in Coventry; while the highest rates were 18·8 in Stockport, 18·9 in Middlesbrough, 20·3 in Norwich, 21·3 in Preston, 22·2 in Newcastle-on-Tyne, 22·5 in Huddersfield, 24·0 in Warrington, and 34·9 in Wigan. The 4277 deaths in these towns last week included 495 which were referred to the principal infectious diseases, against 525, 528, and 519 in the three preceding weeks; of these 495 deaths 217 resulted from measles, 125 from whooping-cough, 58 from diarrhœa, 40 from diphtheria, 30 from scarlet fever, 23 from "fever" (principally enteric), and two from small-pox. No death from any of these diseases was registered last week in Willesden, Hornsey, Hastings, Plymouth, Devonport, Burton-on-Trent, Walsall, West Bromwich, Grimsby, Barrow-in-Furness, Rotherham, Tynemouth, or Newport (Mon.); while among the other towns the highest death-rates from the principal infectious diseases were recorded in Walthamstow, Hanley, Warrington, Salford, Burnley, Huddersfield, Leeds, Sunderland, and Rhondda. The greatest proportional mortality from measles occurred in Walthamstow, Norwich, Birkenhead, St. Helen's, Burnley, Huddersfield, Leeds, Newcastle-on-Tyne, and Rhondda; from scarlet fever in Hanley and Warrington; from diphtheria in Hanley and Stockton-on-Tees; from whooping-cough in Birmingham, Smethwick, Warrington, Bolton, Blackburn, and Swansea; and from "fever" in Wigan. Of the two fatal cases of small-pox registered in these towns last week one belonged to Leicester and one to Halifax. The number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had been 99, 96, and 118 at the end of the three preceding weeks, had declined again to 96 at the end of last week; 10 new cases were admitted during the week, against 26, 18, and 33 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, June 4th, was 1673, against 1600, 1630, and 1663 on the three preceding Saturdays; 207 new cases were admitted during the week, against 239, 222, and 194 in the three preceding weeks. The deaths in London referred to pneumonia and to diseases of the respiratory system, which had been 231, 210, and 188 in the three preceding weeks, further declined to 181 last week but were nine in excess of the number in the corresponding period of last year. The causes of 50, or 1·2 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leicester, Bolton, Salford, Leeds, Newcastle-on Tyne, Cardiff, and in 46 other smaller towns, while the highest proportions of uncertified deaths were registered in Birmingham, St. Helen's, Preston, Sheffield, Hull, Sunderland, Gateshead, and Tynemouth.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 17·9, 18·7, and 17·6 per 1000 in the three preceding weeks, rose again to 18·1 per 1000 during the week ending June 4th and was 3·5 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·8 in Perth and 13·0 in Leith to 19·4 in Greenock and 23·0 in Dundee. The 600 deaths in these towns included 26 which were referred to whooping-cough, 16 to measles, 14 to diarrhœa, three to scarlet fever, three to diphtheria, and two to small-pox, but not any to "fever." In all, 64 deaths resulted from these principal infectious diseases last week, against 75, 58, and 62 in the three preceding weeks. These 64 deaths were equal to an annual rate of 1·9 per 1000, which was 0·2 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 28, 21, and 29 in the three preceding weeks, declined again last week to 26, of which 16 occurred in Glasgow, four in Edinburgh, three in Aberdeen, and two in Paisley. The deaths from measles, which had been 17, 16, and 12 in the three preceding weeks, rose again to 16 last week, and included six in Greenock, four in Edinburgh, three in Glasgow, and three in Dundee. The fatal cases of diarrhœa, which had been 13 and 15 in the two preceding weeks, decreased last week to 14, of which seven were registered in Glasgow, two in Edinburgh, two in Dundee, and two in Aberdeen. The deaths from scarlet fever, which had been four, four, and two in the three preceding weeks, rose again to three last week, and included two in Edinburgh, where two of the three fatal cases of diphtheria also were registered. The two deaths from small-pox belonged to Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 90, 97, and 85 in the three preceding weeks, rose again last week to 87, but were 24 below the number in the corresponding period of last year. The causes of 34, or nearly 6 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·6, 21·9, and 21·3 per 1000 in the three preceding weeks, further declined to 19·7 per 1000 during the week ending June 4th. During the past four weeks the death-rate has averaged 21·1 per 1000, the rates during the same period being 14·7 in London and 18·2 in Edinburgh. The 143 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 12 from the number in the preceding week and included 16 which were referred to the principal infectious diseases, against 17, 13, and 8 in the three preceding weeks; of these, 9 resulted from whooping-cough, five from measles, and two from "fever," but none from small-pox, scarlet fever, diphtheria, or diarrhœa. These 16 deaths were equal to an annual rate of 2·2 per 1000, the death-rates last week from the principal infectious diseases being 1·6 in London and 2·2 in Edinburgh. The fatal cases of whooping-cough, which had been ten, five, and four in the three preceding weeks, rose again last week to nine. Five deaths from measles were recorded last week, against two, two, and none in the three preceding weeks. The 143 deaths in Dublin last week included 21 of children under one year of age and 39 of persons aged 60 years and upwards; the deaths of infants showed a slight decline, while those of elderly persons exceeded the number in the preceding week. Two inquest cases and two deaths from violence were registered, and 55, or more than a third, of the deaths occurred in public institutions. The cause of only one death registered in Dublin last week was not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

APPOINTMENT OF DIRECTOR-GENERAL.

Inspector-General Herbert Mackay Ellis has been selected for the appointment of Director-General of the Medical Department of the Royal Navy, in succession to Inspector-General Sir Henry Frederick Norbury, K.C.B., who will shortly relinquish that post.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel C. Seymour, has been selected to succeed Colonel T. Ligertwood as physician and surgeon of the Royal Hospital, Chelsea, and has taken up the duties there.

INDIAN MEDICAL SERVICE.

Colonel W. R. Browne has been selected to officiate as Surgeon-General with the Government of Madras, in the absence of Surgeon-General D. Sinclair, on leave in England.

ARMY MEDICAL RESERVE OF OFFICERS.

Captain F. D. Woolley, Royal Army Medical Corps Volunteers, to be Surgeon-Captain (dated June 4th, 1904). Surgeon-Lieutenant J. R. Williams, 3rd Volunteer Battalion

the Royal Welsh Fusiliers, to be Surgeon-Lieutenant (dated June 4th, 1904).

IMPERIAL YEOMANRY.

Northumberland (Hussars): Surgeon-Captain A. Brumell to be Surgeon-Major (dated June 4th, 1904). Oxfordshire (Queen's Own Oxfordshire Hussars): Surgeon-Lieutenant (Honorary Captain in the Army) E. Hopkinson, D.S.O., resigns his commission (dated June 4th, 1904). Lanarkshire (Queen's Own Royal Glasgow): Veterinary-Lieutenant J. M. McCall resigns his commission (dated May 28th, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Carnarvonshire: The undermentioned officers are transferred from the 1st Cheshire and Carnarvonshire Royal Garrison Artillery (Volunteers):—To be Lieutenants: Surgeon-Lieutenant-Colonel E. J. Lloyd (dated June 4th, 1904) and Surgeon-Lieutenant C. W. Owen (dated June 4th, 1904).

Rifle: 1st Volunteer Battalion the Manchester Regiment: Surgeon-Captain W. F. O'Grady to be Surgeon-Major (dated June 4th, 1904). 5th (Ardwick) Volunteer Battalion, the Manchester Regiment: Surgeon-Major J. G. Saville resigns his commission and is granted the honorary rank of Surgeon-Lieutenant-Colonel, with permission to wear the prescribed uniform (dated June 4th, 1904). 5th (Irish) Volunteer Battalion, the King's (Liverpool Regiment): Surgeon-Lieutenant-Colonel D. E. Flinn resigns his commission and is granted the honorary rank of Surgeon-Colonel, with permission to wear the prescribed uniform (dated May 28th, 1904); Surgeon-Lieutenant J. G. Moyles resigns his commission (dated May 28th, 1904); Lieutenant H. M. Bayer resigns his commission and is appointed Surgeon-Lieutenant (dated May 28th, 1904); and John Maurice Ahern to be Surgeon-Lieutenant (dated May 28th, 1904). 3rd Lanarkshire: Surgeon-Lieutenant-Colonel A. Napier to be Brigade-Surgeon-Lieutenant-Colonel, and is borne as Supernumerary whilst holding the appointment of Senior Medical Officer of the Scottish Rifle Volunteer Infantry Brigade (dated May 28th, 1904). 1st Volunteer Battalion, the Northamptonshire Regiment: Surgeon-Lieutenant H. S. Baker to be Surgeon-Captain (dated May 28th, 1904). 2nd (South) Middlesex: Surgeon-Captain Edmund Percival Isaacs is permitted to change his name to Edmund Percival Isaacs Coke. 4th Volunteer Battalion, the Manchester Regiment: Captain and Honorary Major John Crawhall Nichol, retired, to be Surgeon-Lieutenant (dated May 28th, 1904). 5th (Glasgow Highland) Volunteer Battalion, the Highland Light Infantry: Supernumerary Brigade-Surgeon-Lieutenant-Colonel D. Cowie, Senior Medical Officer, Highland Light Infantry, Volunteer Infantry Brigade, resigns his commission, and is granted the honorary rank of Surgeon-Colonel, with permission to wear the prescribed uniform (dated May 28th, 1904).

BEARER COMPANY ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

3rd London Bearer Company: Captain E. Lloyd-Williams to be Major (dated June 4th, 1904). The London Companies: Captain J. Harper to be Major (dated May 28th, 1904). Gloucester and Somerset Bearer Company: David Brynmor Chiles-Evans to be Lieutenant (dated May 28th, 1904). North-East Lancashire Bearer Company: Captain J. M. H. Martin to be Major (dated May 28th, 1904). 4th or City of London Bearer Company: John Forbes to be Lieutenant (dated May 28th, 1904). Welsh Bearer Company: Major C. Downing to be Brigade-Surgeon-Lieutenant-Colonel whilst holding the appointment of Senior Medical Officer to the Welsh Volunteer Infantry Brigade (dated Jan. 23rd, 1904).

A GALLANT ACTION.

The *London Gazette* of June 7th contains the following: "The King has been graciously pleased to signify his intention to confer the decoration of the Victoria Cross on the under-mentioned officer, whose claims have been submitted for His Majesty's approval, for conspicuous bravery in Somaliland, as stated against his name:—Lieutenant Clement Leslie Smith, Duke of Cornwall's Light Infantry—At the commencement of the fight at Jidballi on Jan. 10th, 1904, the enemy made a very sudden and determined rush on the 5th Somali Mounted Infantry from under cover of bushes close at hand. They were supported by rifle fire, advanced very rapidly and got right amongst our men. Lieutenant Smith, Somali Mounted Infantry, and Lieutenant J. R. Welland, M.D., Royal Army Medical Corps, went out to the aid of Hospital Assistant Rahamat Ali who was wounded and endeavoured to bring him out of action on a horse, but the rapidity of the enemy's advance rendered this impossible and the hospital assistant was killed. Lieutenant Smith then did all that any man could do to bring out Dr. Welland, helping him to mount a horse and, when that was shot, a mule. This also was hit and Dr. Welland was speared by the enemy. Lieutenant Smith stood by Dr. Welland to the end and when that officer was killed was within a very few paces of him, endeavouring to keep off the enemy with his revolver. At that time the dervishes appeared to be all round him and it was marvellous that he escaped with his life."

WAR MEDALS FOR CIVIL SURGEONS.

The War Office announces that a number of war medals for civil surgeons who served with troops during the campaign in South Africa have been received but cannot be forwarded as the present addresses of the gentlemen to whom they have been awarded are unknown. Civil surgeons who have not received their medals are requested to make application to the secretary, War Office, 68, Victoria-street, London, S.W.

THE WAR IN THE FAR EAST.

There are, as is always the case and may be confidently expected, rumours as to military movements that have already been made or are about to take place, but there is little really known about the actual situation of the belligerent forces at the present time and still less of the intentions of those in command of them. We do not, for example, know for certain that General Kuropatkin is moving south in order to relieve the garrison in Port Arthur in deference to the pressure of political opinion in Russia, nor does it seem likely that the Czar should have issued any definite order in favour either of the alleged policy of Admiral Alexeiff or that of General Kuropatkin. But there does not seem to be any doubt about the Japanese intentions to attempt the capture of Port Arthur, for which they have been carefully preparing. From a strategical and military point of view the situation is most interesting when it is remembered that in addition to the large Japanese force besieging Port Arthur there are the two other Japanese armies in the field under Generals Kuroki and Nodzu watching the Russian movements and presumably ready to strike in at an opportune time on the Russian flank and rear. But so far as the medical aspects of the campaign are concerned there is a comparative dearth of information. It is understood that hospital accommodation and preparations on a large scale have been provided at Vladivostock of which place, however, we hear almost nothing.

A Russian medical man who has lived a long time in Japan writes in the *Warsaw Dnevnik* on the hospitals of the Japanese Red Cross Society as follows. The wards, corridors, and specialists' cabinets are wonderfully clean and neat, and the cabinets are furnished with all necessary instruments and appliances. Every 40 or 50 steps along the main passages short light corridors branch off, each ending in an invalids' room. All the bedsteads are iron, they are very wide, and are provided with excellent linen. The wards in the chief hospital of the society, as indeed in all Japanese hospitals, are divided into four classes: those of the first class accommodate only one patient, or at most two; those of the fourth class will take in as many as 20 or 24 patients in one large room. But everywhere uniform cleanliness and order prevail. No smell is allowed to hang about. Ventilation is assured. The illumination is by electricity and the heating by stoves. He closes his article by observing that such knowledge makes it more comforting to the relatives of such as may fall into their hands, for their conduct towards their invalided enemies is "correct."

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The June issue of the *Journal of the Royal Army Medical Corps* contains a communication by Mr. Ernest E. Austen of the Zoological Department of the British Museum on the House Fly and certain Allied Species as Disseminators of Enteric Fever among Troops in the Field. The author quotes many facts to prove his thesis and after discussing the natural history of the order diptera rightly says: "It is one thing to draw attention to admitted facts and quite another to indicate a remedy." He hopes, however, that the authorities of the Royal Army Medical Corps will without delay seriously consider the question of flies and latrines in standing camps in hot climates. "Unless this

be done and material improvements in the existing system be effected it is inevitable that recent experience will be repeated in the next great war in which we are involved and wastage from enteric fever will continue to the same extent as of old." The paper is a suggestive one and deserves careful attention. Among the other communications we may call attention to Mauser Bullet Wounds of Nerves, a Surprising Lesion, by Major S. F. Freyer, C.M.G., R.A.M.C.; Major J. Fayrer's contribution on High-frequency Currents; Lieutenant-Colonel A. M. Davies's notes on the Instruction of Staff and Regimental Officers in Military Hygiene; and the second part of the editorial article on Malta Fever.

Permission has been given to Dr. Fristedt, assistant surgeon, Swedish Army, to visit the barracks and hospitals in London about the beginning of August.

A walking contest between soldiers which took place in the outskirts of Paris on May 29th has resulted in one death and numerous cases of heat-stroke. 30 per cent. of the competitors are said to have been in need of medical assistance. The distance was about 28 miles.

It has been decided to abolish the rum ration on transports and to substitute, on homeward voyages only, an issue, on payment of 2*d.* a pint, of British-brewed ale or an alternative ration of chocolate at ½*d.* a pint, to troops who desire to make such purchases.

Correspondence.

"Audi alteram partem."

HOSPITAL SUNDAY.

To the Editors of THE LANCET.

SIRS,—I am this year President and Treasurer of the Hospital Sunday Fund and as such I appeal most earnestly to all classes, rich and poor, to assist me, each according to his means, to make the collection as large as possible, for the institutions for which I am pleading are sorely in need of help. All must know of the very great benefits conferred by our hospitals, for not only do they succour the very poor, but as training schools for our medical men they render incalculable services to those who can afford to pay for the skill and experience gained within their walls. Now if everyone will give something to swell the amount I am sure the institutions will be placed in a position to fulfil the charitable duties for which they were established. Mr. George Herring has again with splendid liberality offered to add one quarter, up to £25,000, to the sum collected in places of worship. I am, very truly yours,

J. T. RITCHIE,
Lord Mayor.

Mansion House, E.C., June 6th, 1904.

SPONGES AND FORCEPS LEFT IN THE ABDOMINAL CAVITY.

To the Editors of THE LANCET.

SIRS,—The distressing calamities which occur in connexion with this subject from time to time necessitate, in my judgment, some definite action on the part of surgeons to render this accident impossible. I am thankful to say that one of these surgical disasters has never occurred to myself though operating on all sorts of abdominal cases over a series of years. I have always adhered to two principles: the first to use few sponges and forceps and to have the number of these written on a slate; and the second to verify the sponges and forceps personally after each abdominal case and never to leave this duty to a subordinate. Also I have made it a rule never to pass a sponge deeply into the abdomen without attaching it to a long pair of forceps which projects from the wound and cannot fail to attract attention to the sponge beneath. As for tearing sponges into pieces, or using "wholesale" wool and gauze "dabs," as is often now done, I can only say that such practice is franght with risk and I cannot too strongly inveigh against it.

On talking this serious matter over with my friend Dr. Hewitt, who from the coign of vantage occupied by the anæsthetist is able to judge largely of surgical practice, he suggested a method for the custody of sponges which I at once put into use. A coarse wire tray is made containing (for myself) six compartments. This lies in the antiseptic lotion and the six sponges are each in its own compartment. At the end of the operation the tray is shown to me with each sponge in its place. The number of compartments may be made to vary with the fancy of the operator as to the number of sponges to be employed. Next as to pressure forceps. I am having constructed a white delf disc 12 inches in diameter and about half an inch thick. In this are bored 18 holes equidistant round the edge. These holes are plainly numbered in red figures. The "clips" stand in the disc and at the end of the operation, before the wound is closed, the operator is shown each pressure forceps in its proper place. He can see that "all is right" at a glance. Added to these precautions the numbers should be written on a slate previously to operation which prevents the error of adding to the number of forceps or sponges after the operation is commenced. Large forceps and clamps can hardly be left in the abdominal cavity. I recommend these simple devices very strongly and earnestly to the notice of my professional brethren both for hospital and private practice. The surgeon cannot avoid personal responsibility for these serious mishaps, and all of us who have been long in practice know of instances of their occurrence in the practice of well-known operators. Such cases have never obtained unfortunate publicity but speak eloquently to the truth of the maxim "Humanum est errare." I am, Sirs, yours faithfully,

A. MARMADUKE SHEILD.

Cavendish-place, W., June 6th, 1904.

THE SO-CALLED PANCREATIC REACTION IN THE URINE.

To the Editors of THE LANCET.

SIRS,—We consider Dr. P. J. Cammidge's reply to our criticism of his "pancreatic reaction" as very unsatisfactory. It will, perhaps, be best to state some of our objections to his "reaction" and to his letter in tabular form so that he and others may the more easily estimate their merits or demerits.

1. Dr. Cammidge's remarks about the varying solubility of lead chloride in hot and cold water were well known to us but as an answer to our criticism are quite beside the mark. The fact that lead chloride is soluble at all in water at 0° C. should have suggested to Dr. Cammidge the necessity of removing the lead salts from the solution with which he was experimenting before proceeding with his test. Therefore we, in estimating the value to be attached to this "pancreatic reaction," thought it advisable to remove this possible source of fallacy and after having done so we found that those cases, pancreatic and otherwise, which previous to the removal of the lead salts gave a positive reaction, now uniformly yielded negative results. These cases included: (*a*) one case of acute pancreatitis; and (*b*) five cases of "chronic pancreatitis"—that is to say, cases in which the pancreas showed distinct evidence of interstitial overgrowth. All these cases were verified post mortem. Surely were the test dependent on any change in the original constituents of the urine, resulting from disease of the pancreas, removal of the lead salts should in nowise interfere with positive results in such cases. How, then, explain the total absence in the above six verified cases of such results?

2. Moreover, the crystals we obtained were not those of lead chloride, as Dr. Cammidge suggests. They were only obtained when phenylhydrazine hydrochlorate and sodium acetate in solution were boiled with a solution containing lead salts (e.g., as in "Reaction A"). Presumably they consist of a compound that the lead salts form with phenylhydrazine. As we stated, they do not appear when the lead salts (chlorides, &c.) are removed previous to adding the phenylhydrazine, &c.

3. The shape of these crystals is almost identical with those of phenylglucosazone, so much so that when both the lead-compound crystals and the latter were present together (as in applying "Reaction A" to unfermented diabetic urine), the two sets of crystals could not be distinguished, though each could, by the appropriate processes, be obtained separately and so be compared with those in the mixture. Again, in spite of his assertion that the lead-compound crystals were "quite distinct both in behaviour and appearance" from the crystals of his pancreatic reaction we may mention that we have shown them

to competent observers who have been unable to distinguish them from those of phenylglucosazone as examined microscopically. Since Dr. Cammidge's crystals, according to his original statement, also resembled very closely those of phenylglucosazone we presume that the lead-compound crystals and his crystals (if these latter have a separate existence) would also closely resemble each other, so much so as to be indistinguishable. Hence his fallacy in neglecting to remove the lead salts must be considered a fatal objection to the value of the reaction.

4. We would like an expression of opinion as to whether Dr. Cammidge gives sufficient grounds for diagnosing so many cases as ones of pancreatic disease. We notice that only three of the cases could be subjected to a post-mortem examination, which in most instances is the only true criterion for the presence of disease in the pancreas. We are, of course, aware that acute pancreatitis can usually be correctly diagnosed on the operating table, but we have grave doubts as to whether more chronic and less obvious changes can be unhesitatingly recognised there even by the most skilful hands. How often in the post-mortem room does it require careful handling and close investigation to decide upon these points, which have often to be left to the final arbitrament of the microscope. Does Dr. Cammidge, then, give the profession sufficient proof that the cases he describes as those of pancreatic disease were really of that nature?—We are, Sirs, yours faithfully,

CHARLES E. HAM, M.B Lond.
J. BURTON CLELAND, M D. Sydney.

The Pathological Institute, London Hospital, May 20th, 1904.

To the Editors of THE LANCET.

SIRS,—The correspondence now taking place under the above heading calls to my mind the case of a patient who came under my notice in the South Devon and East Cornwall Hospital, Plymouth. The case was that of a man, aged 50 years, who was admitted under the care of Mr. W. L. Woollcombe on March 9th, 1904. His illness had begun in January, 1902, with "wind and distension" together with the passage of loose light-coloured stools. In January, 1903, a severe attack of jaundice occurred and from that date to the time of his admission he was more or less jaundiced with one acute attack in November, 1903, the abdomen remaining distended. On admission to the South Devon and East Cornwall Hospital he was jaundiced, the liver was enlarged, the stools were loose and yellow, and the abdomen was distended. On March 17th the spleen was noticed to be enlarged. No cardiac murmurs were heard.

On March 15th I was asked to examine the blood. There were 4,600,000 erythrocytes per cubic millimetre, 8314 leucocytes per cubic millimetre, 75 per cent. of hæmoglobin, a blood index of 0·7, and films showed the usual proportion of one variety of leucocyte to others. On April 7th I was asked to examine the urine by the "pancreatic" test for chronic pancreatitis.[1] The urine was dark brown in colour and neutral in reaction; its specific gravity was 1015. A cloud of mucus was present. There was no sugar or albumin present. The centrifuged urine contained no calcium oxalate crystals. Gmelin's test for bile pigments and Pettenkofer's for bile salts both gave positive results and the urobilin spectrum was present. The final interpretation of the test in this case, according to Dr. P. J. Cammidge, was either disease other than pancreatic or damage due to past pancreatitis. Indications apart from the conditions of the pancreas existed for operation and cholecystotomy was performed on May 2nd by Mr. Woollcombe but the patient died during the night.

At the post-mortem examination I found great enlargement of the liver, its weight being seven pounds eight ounces, whereas the normal weight is from three to three and a half pounds with several soft gall-stones in the hepatic ducts and general cholangitis. Cirrhosis and perihepatitis were present. The pancreas weighed with adherent tissue about eight ounces and was hard. The spleen weighed two and a half pounds; there were congestion, fibrosis, and perisplenitis. The kidneys were enlarged; the right weighed eight and a half ounces and the left nine ounces; both were congested. The common hepatic, the cystic, the common bile, and Wirsung's ducts were not obviously dilated. The ampulla of Vater was normal and Wirsung's duct opened separately into it. The gall-bladder was contracted and pulled backwards and upwards by adhesions and contained infected bile. There were early peritonitis present and inflamed lymphatic glands at the portal fissure. The mitral valve of the heart was thickened and incompetent. The tissues were generally bile-stained. Th pancreas showed much interlobular fibrosis, with slight round-celled infiltration about the ducts in a few places. The islands of Langerhans and the gland epithelium were normal. The spleen showed congestion and fibrosis but no change in the Malpighian bodies. The lymphatic glands contained micro-organisms. Interlobular fibrosis of the pancreas was present, therefore, with slight signs of recent inflammation. The test, repeated carefully on April 14th, was negative as to the presence of chronic pancreatitis, as stated previously. Presumably the stage of the inflammatory reaction determines the result of the test. Perhaps Dr. Cammidge would give his valuable experience (*a*) on this point; (*b*) on the significance, if any, of the smaller number and size of the yellow crystals obtained by method "B" relatively to method "A"; and (*c*) the nature of certain short yellow acicular crystals occasionally formed in the phenylhydrazin test in the urine in the absence of copper-reducing substances. I am indebted to Mr. Woollcombe for permission to publish the case and to Dr. Weatherhead and Dr. Day, house surgeons, for the notes.

I am, Sirs, yours faithfully,

F. G. BUSHNELL, M D. Lond.,
Pathologist, South Devon and East Cornwall Hospital, Plymouth.

June 4th, 1904.

[1] Dr. Cammidge: Arris and Gale lecture, THE LANCET, March 19th, 1904, p. 782.

"EUGENICS."

To the Editors of THE LANCET.

SIRS,—I think it would be impossible to imagine a subject of greater importance to the community than the one Mr. Galton has brought forward. It would be difficult to name one of which the public is more ignorant. The procedure which he suggests to us is admirable. At the root of every moral and social question lies the problem of heredity. Until a knowledge of the laws of heredity is more widely diffused the public will grope in the dark in its endeavours to solve many pressing difficulties. I venture to offer a few remarks on one or two of the questions raised in Mr. Galton's paper.

How shall we bring about a "wide dessemination of a knowledge of the laws of heredity so far as they are surely known and the promotion of their further study"? The study of heredity requires a good deal of knowledge of a rather abstruse kind; above all it requires very close and exact methods of thought. We shall find neither the necessary knowledge nor the exact methods of thought in the average man of business or pleasure who has been trained in the average British home or the average British school. We shall not be able to reach the public until we are able to influence the education of a body of men whose studies naturally bring them into relation with the subject and who, when united, are numerous enough and powerful enough to sway public opinion. Only one such body of men exists—the medical profession. When the study of heredity forms as regular part of the medical curriculum as anatomy and physiology, then, and not till then, will the laws of heredity be brought to bear on the solution of social problems. At present a specialist like Mr. Galton has a very limited audience, in effect it is composed of specialists like himself. The difficulty of his subject and the profound ignorance of the public deprive him of a large part of his possible influence for good. Until among medical men a systematic knowledge of heredity is substituted for a bundle of prejudices and close and clear reasoning for wild guess-work, the influence of men of his type, most unhappily, is not likely to extend much beyond the limits of a few learned societies.

The first essential towards a knowledge of the laws of heredity and the first essential towards the application of those laws to social questions is a clear grasp of the distinction which exists between what are known as inborn traits and what are known as acquired traits. Inborn traits are those with which the individual is born, which come to him by nature, which form his natural inheritance from his parents. Acquired traits are alterations produced in inborn traits by influences to which they are exposed during the life of the individual. Thus a man's limbs are inborn traits, but the changes produced in them by exercise, injury, and so forth are acquired traits. All men know that the

individual tends to transmit his inborn traits to his offspring. But it is now almost universally denied by students of heredity that he tends to transmit his acquired traits. The real, the burning question among students of heredity is whether changes in an individual caused by the action of the environment on him tend *in any way* to affect the offspring subsequently born to him. Thus, for example, does good health in an individual tend to benefit the offspring subsequently born to him; does his ill health tend to enfeeble them?

It is generally assumed that changes in the parents do tend to influence the inborn traits of offspring. Thus we have heard much of the degeneracy which it is alleged is befalling our race owing to the bad hygienic conditions under which it dwells in our great and growing cities. The assumption is made that the race is being so injured by the bad conditions and that the descendant of a race of slum-dwellers, if removed during infancy to the country, would on the average be inferior physically to the descendant of a line of rustics; whereas, contrariwise, the descendant of a line of rustics, if removed during infancy to the slums, would be superior physically to the majority of the children he would meet. I believe the assumption to be a totally unwarrantable one. It is founded on a confusion between inborn and acquired traits. Of course the influences which act on a slum-bred child tend to injure him personally. But there is not an iota of evidence that the descendant of a line of slum-dwellers is on the average inferior to the descendant of a line of rustics whose parents migrated to the slums just after his birth. I believe, in fact, while a life in the slums deteriorates the individual it does not affect *directly* the hereditary tendencies of the race in the least. A vast mass of decisive evidence may be adduced in support of this contention. Slums are not a creation of yesterday. They have existed in many countries from prehistoric times. Races that have been most exposed to a slum life are not inferior physically and mentally to those that have been less or not at all exposed. The Chinese, for example, who have been more exposed and for a longer time to their influences than any other people, are physically and mentally a very fine race and certainly not inferior to the Dyaks of Borneo for example. There is also a mass of collateral evidence. Thus Africans and some other races have been literally soaked in the extremely virulent and abundant poison of malaria for thousands of years. We know how greatly malaria damages the individual. But Africans have not deteriorated. Like the Chinese, physically, at any rate, they are a very fine race. Practically speaking every negro child suffers from malaria and may perish from it. The *sufferings* of the negroes from malaria have produced no effect on the race but the *deaths* of the negroes from malaria have produced an immense effect. The continual weeding out during many generations of the unfittest has rendered the race pre eminently resistant to malaria, so that negroes can now flourish in countries which we, who have suffered very little from malaria, find it impossible to colonise. Similarly the inhabitants of Northern Europe have suffered greatly for thousands of years from consumption, especially in places where the population has been dense, where there have been many cities and towns and therefore slums. They also have not deteriorated; they have merely grown pre-eminently strong against consumption. They are able to live, for example, in English cities in which consumption is very rife and which individuals of races which have been less exposed to the disease find as dangerous as Englishmen find the West Coast of Africa. During the last 400 years consumption has spread very widely and now no race is able to live in cities and towns in cold and temperate climates that has not undergone evolution against it. In other words, no race is capable of civilisation that has not undergone evolution against consumption, as well as other diseases and influences, deteriorating to the individual, which civilisation brings in its train. Many biologists and most medical men believe that influences acting on parents tend *directly* to alter the hereditary tendencies of offspring. In technical terms they believe that variations are caused by the action of the environment. How they can contrive to do so in the face of the massive and conclusive evidence afforded by the natural history of human races in relation to disease is beyond my comprehension. How could a race undergo evolution against malaria, for example, if parental disease altered and injured the hereditary tendencies of the offspring? How could natural selection select if all variations were unfavourable? The observations on disease and injury published by Brown-Séquard, Cossar Ewart, and many medical men are capable of an interpretation entirely different from that which they gave.

Mr. Galton speaks as if the causes which brought about "the disappearance of most savage races when brought into contact with high civilisation" were obscure. I can assure him, however, that they had been worked out precisely and statistically by medical observers on the spot. Apart from extermination by war the only savage races which are disappearing are those of the New World and in every instance they are perishing from the enormous mortality caused among them by introduced diseases against which their races have undergone no evolution. He will find these precise statistics in the tables of mortality issued by all the public health departments that exist in America, Polynesia, and Australasia. He will find also many accounts in the journals of travellers. If he will read the records of visits of parties of aborigines from the New World to the cities of Europe he will find that their mortality, especially from consumption, was invariably high. There is nothing more obscure about the disappearance of these races than there is about the disappearance of the dodo and the bison. They are perishing, not because, as Froude poetically put it, they are like caged eagles incapable of domestication. They do not wilt away mysteriously. They perish simply and solely because they are weak against certain species of bacteria which flourish especially well under the conditions of civilised life. If malaria, instead of consumption, were prevalent in cities then the English would be incapable of civilisation, whereas the negroes and the wild tribes about the Amazon and in New Guinea and Borneo would be particularly capable of it. Indeed, it may be taken as a general rule to which there is absolutely no exception that every race throughout the world is resistant to every disease precisely in proportion to its past experience of it and that only those races are capable of civilisation which are resistant to the diseases of dense populations.

Before the voyage of Columbus hardly a zymotic disease, with the exception of malaria, was known in the New World. The inhabitants of the Old World had slowly evolved against their diseases under the gradually worsening conditions caused by the gradual increase of population. They introduced them to the natives of the New World under the worst conditions then known. They built cities and towns, the natural breeding places of all zymotic diseases except those of the malarial type. They gave the natives clothes which are the best vehicles for the transport of microbes. They endeavoured to Christianise and to civilise the natives and so drew them into buildings where they were infected. They forced them to labour on plantations and in mines. In fact, they forced on them every facility for "catching" disease. As a result they exterminated, or are exterminating, them. The natives of the Gilbert Islands lately petitioned our Government not to permit missionaries to settle among them as they feared destruction. They were perfectly right. Clothes and churches and school rooms are fatal to such people. The Tasmanians before they were quite exterminated had a saying that good people—that is, people who went frequently to church—died young; they also were perfectly right. It is a highly significant fact that, whereas every white man's city in Asia or Africa has its native quarter, no white man's city in the New World has its native quarter. To find the pure aborigines of the New World we must go to parts remote from cities and towns. They cannot accomplish in a few generations an evolution which the natives of the Old World accomplished only after hundreds, perhaps thousands, of generations and at the cost of thousands of millions of lives. The negroes who were introduced into America to fill the void created by the disappearing aborigines have persisted; but they have already undergone some evolution against the chief disease of civilisation, consumption, and much evolution against measles and other diseases. Yet the negroes would not have persisted had they not been introduced under special conditions. They were taken to the warmer parts of America at a time when consumption was little rife as compared to its prevalence in the cities of Europe and they were employed mainly in agricultural occupations. They had a special start and were placed under conditions which worsened only slowly. As a result they underwent evolution and are now able to persist in America. But African negroes,

as compared to the natives of the densely populated parts of Europe and Asia, have undergone little evolution against consumption. As a consequence no African colony has ever succeeded in Europe or Asia. For instance, the Dutch and English imported about 15,000 negroes into Ceylon a century ago. Within 20 years all, except a mere handful, had perished mainly of consumption and that is a country where the disease is not nearly so prevalent as in Northern Europe or the more settled parts of Northern Asia.

There can be little doubt that the sterility of New World races when brought in contact with civilisation is due mainly to ill health. The sterility of our upper classes, as any medical man will inform Mr. Galton, is mainly voluntary. It is due to the possession of special knowledge. The growing sterility of the lower orders is due to the spread of that knowledge; hence the general and continuous fall in the birth-rate. Until we are able to estimate the part played by this knowledge it would be vain to collect statistics of comparative fertility. We have frequently been told that no city family can persist for four generations unless fortified by country blood. That, I believe, is a complete error. Country blood does not strengthen city blood. It weakens it; for it has been less thoroughly purged of weak elements. It is true, owing to the large mortality in cities and the great immigration from the country, it is difficult to find a city family which has had no infusion of country blood for four generations. But to suppose on that account that country blood strengthens city blood against the special conditions of city life is to confuse *post hoc* with *propter hoc*. Slum life and the other evil influences of civilisation, including bad and insufficient food, vitiated air, and zymotic diseases, injure the individual. They make him acquire a bad set of traits. But they do not injure the hereditary tendencies of the race. Had they done so, civilisation, which implies a dense population, would have been impossible. On the contrary, by weeding out the unfittest they make the race strong against those influences. If, then, we wish to raise the standard of our race we must do it in two ways. In the first place, we must improve the conditions under which the individual develops and so make him a finer animal. In the second place, we must endeavour to restrict as much as possible the marriage of the physically and mentally unfit. In other words, we must attend both to acquired and inborn characters. By merely improving the conditions under which people live we shall improve the individual but not the race. The same measures will not achieve both objects. Medical men have done a good deal for the improvement of the acquired characters of the individual by improving sanitation. They have done nothing towards the second object, the improvement of the inborn traits of the race. Nor will they do anything until they have acquired a precise knowledge of heredity from biologists. On the other hand, before biologists are able to influence medical men they must bring to bear their exact methods of thought on the great changes produced in various races by the experience during thousands of years of disease. I am sure our knowledge of heredity will gain in precision and breadth by a consideration of these tremendous, long-continued and drastic experiments conducted with such momentous results by nature. No experiments conducted by man can compare with them in magnitude and completeness. As I have already intimated, the precise statistical information on which our conclusions may be based are already collected and tabulated. I am sure it is good neither for medicine nor biology that medical men and biologists should live in separate and closed compartments, each body ignoring the splendid mass of data collected by the other. Much of medicine should be a part of biology and much of biology a part of medicine.

I am, Sirs, yours faithfully,

Southsea, May 30th, 1904. G. ARCHDALL REID.

ABSCESS OF THE FRONTAL SINUS.

To the Editors of THE LANCET.

SIRS,—I read with much interest Mr. Herbert Tilley's article in THE LANCET of May 21st, 1904, p. 1414, on Some Experiences in the Surgical Treatment of Suppurative Lesions of the Nasal Accessory Sinuses; also I had previously read with interest his article in THE LANCET of July 14th, 1900, p. 100, on Empyema of the Frontal Sinus; but I should like to draw his attention to two short but admirable papers by Mr. Charles Higgens on Distension of the Frontal Sinus in the Guy's Hospital Reports for 1880–81 and 1893. In the earlier paper Mr. Higgens describes with admirable lucidity a small round fluctuating swelling which forms when the bone has become absorbed in cases of long-standing distension of the frontal sinus at the inner angle of the orbit and *which resembles a distended lacrymal sac*, but is situated above the tendo oculi instead of below it and which cannot, like the distended sac, be emptied by pressure nor can any of its contents be squeezed through the canaliculi. It also has one marked peculiarity—it varies in size at different times in the day.

I have recently seen a case where this swelling was very noticeable This swelling only occurs in cases where the bone has become absorbed and the contents of the sinus project through a hole in the bone beneath the integuments. When present this swelling is of the greatest importance both for diagnosis and treatment. In one of Mr. Higgens's cases "an exploratory incision showed the swelling to be a distended frontal sinus containing white viscid mucus. A probe could be pushed into the cavity a distance of three inches; its breadth appeared to be about one inch."

With regard to treatment, when this swelling is present all that is necessary to do is to make an incision through the swelling and pass a drainage tube into the cavity of the nose. There is obviously in this operation no danger to life, whereas if the trephine is used the freshly cut surface of the diploë is liable to absorb septic material and consequently occur osteomyelitis, meningitis, and death. Mr. Higgens has known all about this small swelling for a quarter of a century, but notwithstanding his two papers in the Guy's Hospital Reports even the greatest nasal specialists seem still to be entirely ignorant as to its nature, nor can I find anything about it in any book.

With regard to the treatment after opening the frontal sinus I fully agree with Mr. Tilley that "from the moment the operation is completed the motto of the surgeon must be, 'Free, unhindered, spontaneous drainage,' and if he secures this he need never fear that any serious harm may come to his patient." I entirely fail, however, to see the desirability of the complete obliteration of the frontal sinus which Mr. Tilley recommends. It is naturally a cavity and I think should remain so if free drainage is secured.

I am, Sirs, yours faithfully,

Beckenham, May 31st, 1904. ROBERT S. WAINEWRIGHT.

THE INFECTIVITY OF SCARLET FEVER.

To the Editors of THE LANCET.

SIRS,—The above subject having lately been much under discussion, the following, taken from the *Medical World* of Philadelphia for February, 1902, may be of interest:—

"In the spring of 1900 a family of children had scarlet fever and though very severe none of them died. During the desquamation whole casts of fingers and toes came away. ..... The mother collected a quantity of these and placed them in a pasteboard box. Having moved to my neighbourhood they were visited in February, 1901, by a family consisting of father, mother, and boy, three years of age. The conversation turning upon scarlet fever the hostess brought out her box of "relics" and exhibited the contents to her visitors, making a special display for the benefit of the boy. ..... On the fourth day following the child had a chill, developing into a very malignant type of scarlet fever. A sister of the child's mother visited the patient from the second to the fifth day with her three children; also the father's brother visited the boy on the third day with his four-year-old boy. The visiting families lived 15 miles away. ..... No other children in the community were exposed and no others had the disease, while everyone that was exposed had scarlet fever in its worst form and every one of them died." The above was reported by Dr. W. R. Fowler of Pottsville, Texas. I am, Sirs, yours faithfully,

ARTHUR E. GRESHAM, M.D.

Sierre Madre, California.

EXTRAORDINARY CASE OF SUICIDAL CUT-THROAT.

To the Editors of THE LANCET.

SIRS,—The extraordinary features of a case of suicidal cut-throat perhaps merit my encroaching on your valuable space. On June 2nd at 8.30 A.M. I received an urgent call to a man who had attempted suicide by cutting his

throat. On my arrival I found the patient to be a man of good physique, quite conscious but aphonic. He lay on the kitchen sofa with a wound in his throat. This cut was some five inches in length. It had been self-inflicted but had necessitated more than one gash to cause it, judging from the ragged ends. The exceptional feature of the case, however, was that the entire larynx with the hyoid bone was conspicuous by its absence. The trachea had been completely severed but the œsophagus was intact. The patient was very blanched and *in extremis*. His carotid and jugular vessels had escaped. His end came a few minutes after my arrival. The deed had been committed an hour before I saw him in an out-house with a blunt penknife and on going there I found on the floor the entire larynx with the hyoid bone. With the exception of an indentation in the cricoid where the knife had struck it they were all in perfect condition. The intrinsic muscles were intact but those attached to neighbouring parts had been severed with the knife. The dissection of the larynx was very wonderful. What determination the man must have possessed to have undergone the agony and torture of excision of his own larynx! The patient had been drinking heavily for some ten days prior to his death. The homicidal impulse of alcoholism, associated with mutilation, seems to me more potent than that of any other form of mania.

I am, Sirs, yours faithfully,

W. MACALISTER BROWN, M.B., Ch.B. Glasg.

Crewe, June 4th, 1904.

THE OLD HARDSHIP OF LONDON MEDICAL STUDENTS.

To the Editors of THE LANCET.

SIRS,—I the more readily sympathise with your correspondent "Hard Lines" (May 21st) since I have had a very similar experience to his at the London University. Returning to England after some years' practice in the tropics I presented myself (for the first time) at the recent M.B. examination. I was rejected in obstetrics and, like your correspondent, was not marked "weak" in any other subject. The gynæcological questions may interest practitioners. There were two:—1. "What are the varieties of urinary fistulæ? Give their causes, diagnosis, and treatment." 2. "Give an account of tumours originating in the vaginal wall. How would you diagnose and treat them?" Despite the examiners' verdict I confess, since I am writing anonymously, that I still consider myself a fairly competent accoucheur. Abroad my midwifery practice was almost entirely operative, one being rarely called to a normal labour. In the eight months I have been in my present practice my midwifery cases comprise three transverse presentations, one multiple (foot and hand), one high forceps operation for contracted pelvis, one placenta prævia, and one case of post-partum hæmorrhage (rather severe). To most of these (including the last) I was called by midwives. I have had no maternal deaths and two stillbirths in transverse presentations to which I was called long after the membranes had ruptured. As it also happens I have operated on four cases of vesico-vaginal fistulæ due to the effects of prolonged unaided labour. (These cases, of course, are commoner in the remote districts of the world where help cannot be obtained, sometimes through such physiographical causes as flooded rivers, &c.) In three I had a perfectly successful result. I admit my operations were not classical ones; they had to be done with such assistance and material as one can command in places far removed from the great centres of civilisation.—I am, Sirs, yours faithfully,

June 1st, 1904. FAILED M.B.

HEALTH OF CORNWALL.—The sanitary committee of the Cornwall County Council, in its annual report for 1903 states that 7319 births were registered during the year, giving a rate of 22·69 per 1000, as compared with 23·82 per 1000 the average birth-rate for the last five years. The birth-rate for 1903 was the lowest the committee had recorded. There were 4578 deaths registered, giving a general death-rate of 14·21 per 1000, as compared with 16·72 per 1000 recorded in 1902. 832 cases of infectious disease were notified, against 925 in the previous year. 445 deaths occurred from phthisis and 106 from other forms of tuberculosis, compared with 473 and 119 respectively in 1902.

THE FOLKESTONE PUBLIC HEALTH CONGRESS AND THE SANDGATE SCANDAL.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE next congress of the Royal Institute of Public Health will meet from July 21st to 27th at Folkestone. Though the date is badly chosen—for it clashes with the meeting of the British Medical Association and of the British Sanitary Institute—it is in one respect fortunate that a congress dealing with public health questions is about to be held at Folkestone. Certainly there is not much of interest from the sanitary point of view at Folkestone except it be that the sewer outfall is badly placed, but a new and most important problem may be studied close at hand. Sandgate is within two miles of Folkestone, public vehicles ply backwards and forwards constantly, and at Sandgate we have a sanitary grievance involving the widest issues. The chief features of this question have already been described,[1] though there are some fresh developments, and the matter has now been brought to the notice of the Government. It is true that the first appeal has failed to induce the Government to take action, but Governments generally need a great deal of awakening before they move in such matters. For this very reason the congress about to meet at Folkestone might render a great service. In the section devoted to preventive medicine no better subject could be found for discussion than the question of the cost to the community that may be caused when phthisical patients are gathered together and in large numbers, not in hospitals but in private houses, not on an isolated spot but in the centre of a town. This is precisely what is taking place at Sandgate.

The facts should be well known by this time. The population of Sandgate does not exceed 2000 and yet this small community had to receive during the course of last year no less than 897 patients suffering from pulmonary tuberculosis. These patients were not isolated but lived in private houses in the town itself and took their exercise in the streets or on the beach among the ordinary inhabitants. These private houses belonged to the late Mr. J. J. Jones and were organised on a purely speculative basis just as so many hotels or lodging-houses. There were 45 deaths from phthisis last year, of which 43 occurred in Jones's homes. Then there were five deaths from other causes in these homes and 14 deaths among the general population. Of course, the patients only remain a few weeks or at most a few months in the homes at Sandgate. Adding together these numerous short visits it is reckoned that they equal an average number of 180 tuberculous patients present all the year round and there were 45 deaths from phthisis. It is evident that many came when the disease had reached an advanced stage and when the risk of infecting others was greatest. Dr. Ballastre, whose public functions at Nice are somewhat similar to those of an English medical officer of health, bears witness that on the Riviera the prevalence of tuberculosis among the native population has increased since so large a number of tuberculous patients from all parts of the world have wintered at Nice, Mentone, and adjoining health resorts. The population of Sandgate is naturally much concerned to find their streets invaded by phthisical patients. Not only do they fear for their own health but all these sick people alarm the ordinary visitor; consequently the lodging-houses are empty and the tradesmen make but poor receipts.

Nevertheless, the Local Government Board first of all refused to hold an inquiry into the matter. Then when the question was pressed forward in the House of Commons by the local Member, Sir Edward Sassoon, Mr. Long replied that he did not feel satisfied that more extensive powers were required, adding that a consumptive patient was more dangerous to the public when not confined in a home. This reply clearly proves that the points at issue are not yet understood, at least by the head of the Local Government Board. One of the great arguments in favour of sanatoriums for tuberculosis, and the one argument of all others which has met with no contradiction, is exactly what Mr. Long himself brought forward—namely, that a consumptive patient is more dangerous to the public when not confined to a home. The patients at Sandgate are not confined to homes;

[1] See THE LANCET, August 22nd, 1903, p. 565.

they live in boarding-houses and frequent the public streets. Grave doubts have been expressed as to whether sanatoriums were of much benefit to the patients themselves, but everyone agrees it is a good thing for the public that tuberculous patients should be taken away from their usual surroundings. It has been pointed out that even though after a few weeks or months they return to their private homes and there ultimately die from the disease still their brief sojourn in a sanatorium will prove of use to the public if not to the patients. The reason is obvious; first, while at the sanatorium they are out of harm's way, and secondly, they then learn how to take care of themselves, how to value the open air and open windows, and how to take precautions so as to insure the disinfection and destruction of their sputum, so that altogether, even though they may return to the community without having obtained much benefit from the treatment, they have at all events been taught how to avoid imperilling their neighbours. But it is precisely because this is not done at Sandgate that the grievance arises. In the technical sense—and that is the only sense which bears on the question—there is no home or sanatorium at Sandgate and the patients are not isolated in any such institution. The patients live in ordinary private dwelling houses situated in the main street, their walls touching the walls of other houses. Most of these dwellings have no gardens and no place whatsoever for the inmates to take exercise. Instead of being isolated the patients live in these ordinary houses and in the streets, mingling all day long with the general population and the soldiers from Shorncliffe Camp. Inside these private houses there is no real medical and prophylactic treatment or discipline such as is associated with the idea of a sanatorium. To begin with, it is in no one's interest to impose such a régime. The only object is to run the whole affair at the least possible trouble and cost, so that there may be the maximum profit made out of the sums paid by or for the patients. If a sanatorium was built in its own ground on an isolated site in the neighbourhood of Sandgate and properly managed by responsible medical men no one would object. The complaint rests in the fact that more than 800 tuberculous patients have been sent to a small town during the course of the year, though there is no institution in the neighbourhood capable of receiving them. Consequently the patients have had to live in ordinary lodging-houses and in the centre of the town just as if they were healthy people.

During the last five years of the last century the annual average number of deaths from pulmonary tuberculosis in England and Wales was 1321·4 per 1,000,000 of the population, or 1·3 per 1000. The census puts the population of Sandgate down at 1995. To this figure two or three hundred may be added to represent the strangers who visit the place for a short time. Thus, for instance, if 800 patients remain at Sandgate for on an average three months each, this would equal an increase of population for the whole year round of 200. Nevertheless, even taking into account the increase of population due to the visitors who remain for a few weeks or months the deaths from pulmonary tuberculosis at Sandgate should not exceed three per annum; as a matter of fact, they amounted for the year 1903 to no less than 45.

Of course, if it could be said that the greater part of these deaths did not occur among the inhabitants of the town but in some large hospital or institution managed by a competent staff of medical men and situated in its own grounds well away from the general population it would not matter. But, on the contrary, these deaths all occurred in the main streets of the town, in various houses, and where there is no staff of medical attendants who can be held responsible for the patients. A medical man in the service of the Jones family does once a day look in at these various private houses where the patients are lodged but he lives at a considerable distance and it is difficult to find him when an emergency occurs. Considering that something like 1000 consumptive patients may go to Sandgate during the course of the year (there were 897 in 1903) there should be a sanatorium to receive them and a fully-qualified physician living on the premises armed with ample power in the management and treatment of this large number of patients. But then a properly constructed sanatorium would probably cost at least £200 per bed and from 25*s.* to 30*s.* per week per patient. A sanatorium of 100 beds would cost £20,000 to build. A private speculator like the late Mr. Jones could scarcely expect to get this money for less than 5 per cent., so he would have to allow £1000 a year for interest on capital. Actually the charge for board and what little treatment is given ranges from £1 1*s.* to £2 5*s.* per week per patient, according to the class or category to which they belong. If everything is done properly this sum would barely do more than cover the working expenses. Even if there was a slight profit it would certainly not suffice to pay the interest on the capital. But then no one has ever pretended that sanatoriums of this description could be made paying concerns and the mere fact that these Jones's homes are run for profit is in itself a sufficient proof that they cannot be properly conducted. Homes for wealthy patients who can afford to pay from £3 3*s.* per week and upwards, not to mention many extras, may yield a profit. The Jones's homes at Sandgate take in paupers for £1 1*s.* per week; second-class paying patients at 25*s.* or 33*s.* if a private bedroom is required; and first-class patients at 35*s.* and 45*s.* if they have a private room. Mr. Jones said that he had 126 beds reserved exclusively for phthisical patients. The popular sanatorium recently built at Borgoumont for the poor of the province of Liège, which contains 114 beds, cost £52,000. Will anyone credit the late Mr. Jones with having spent anything like that sum over the 126 beds he provided for tuberculous patients at Sandgate? If not, why not, and in what consists the difference? and why should such a large expenditure be judged necessary in Belgium for identically the same class of people who in England are entrusted to the tender mercies of the Jones family? The English were thought to be far and away ahead in all matters of sanitation, but here things have been allowed to drift into unqualified hands who have only seen that the outdoor treatment of tuberculosis afforded a means of securing lodgers and of making money out of them.

Poor-law boards of guardians have been circularised and so also have private practitioners. They have been led to infer that there were sanatoriums at Sandgate where tuberculous patients could receive outdoor treatment for a very moderate charge. So it was said that the Jones's homes supplied a want and of course there is always a demand for cheapness. Consequently, and as an easy way of getting rid of troublesome cases, some boards of guardians have been reckless enough to send their tuberculous paupers to these homes. The whole question of sanatoriums and the outdoor treatment of consumption has been studied with the greatest care and many millions of private and public money have been spent in making scientific experiments that extend over hundreds of thousands of cases in Germany, France, Switzerland, and other parts of the continent. At Sandgate, however, this most serious question became a matter of very ordinary speculation. If, nevertheless, this is not serious enough to attract the attention of the Local Government Board perhaps the War Office will be more interested in the matter. Grosvenor House with its 46 beds for pauper patients and Farleigh House and Lymington House with their 49 beds for paying patients face the sea front promenade. The windows overlook the main road that goes from Folkestone to Hythe. The dust blows out from these three houses, which are almost side by side and which hold 95 tuberculous patients, on to the people that pass underneath on this the most frequented thoroughfare of the neighbourhood. Among all these people there are a considerable number of soldiers. Immediately behind these houses commences the ascent up to Shorncliffe Camp. The beginning of the camp grounds is about 500 feet away and the first barracks about 1000 feet from these three private houses that are now used as hospitals. In the thoroughfare that passes close to and under the camp some dying patients were taken out of Farleigh House and carried into Grosvenor House. It is more convenient to have people die in Grosvenor House, there is better accommodation for laying out the corpses, besides there are only paupers at Grosvenor House and presumedly it does not matter about disturbing them. But Farleigh House holds the first-class paying patients. On the other hand, if a patient pays the first-class tariff is it not a breach of contract to disturb him in his last moments and drag him out into the street so that he may be taken to die among the paupers of Grosvenor House? The people who are endeavouring to keep lodging-houses side by side with these so-called homes were shocked by the ghastly sight when dying patients were thus carried from one house to the other. This occurred towards the end of last February. Not far from here there is a public-house frequented by soldiers and it used also to be frequented by women from one of Jones's homes. It is said

that these women were able to return late at night to the home till an officer wrote from the camp and complained and then a better watch was kept. If the President of the Local Government Board has no objection to so large a number of tuberculous patients being dumped down in the midst of a civil population, perhaps the Secretary of State for War may not relish the idea that in the course of a year the soldiers from Shorncliffe Camp are brought into close contact with from 800 to 1000 different cases of pulmonary tuberculosis. Mr. Long said in the House that it is better for such patients to be in a home than at large. But at Sandgate they are at large—they are in the streets all day long; and all day long there are soldiers from the camp in the same streets, shops, on the beach, or in the public-houses, standing or passing close by, or talking to the patients from Jones's so-called homes. These patients are supposed to have outdoor treatment and therefore they are sent out into the streets as often as possible.

The contrast that this state of affairs presents with what has been done on the continent is most discreditable to a country like England. The matter of sanatoriums for tuberculosis was discussed at great length so recently as the International Congress of Hygiene which met at Brussels last year. Being so close to Sandgate it is obvious that the visitors to the forthcoming Folkestone Public Health Congress must also discuss the matter and examine the grievance for themselves. They will thus be able to render a great and practical service. To facilitate this task it may be useful to set forth some of the principal facts and arguments which were brought forward at Brussels by men who in different countries of the world had made a special study of the subject.

(To be continued.)

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Sleeping Sickness: the Liverpool Expedition to the Congo.

THE expedition despatched to the Congo Free State in the autumn of 1903 under the auspices of the Liverpool School of Tropical Medicine for the purpose of studying trypanosomiasis and the cause of sleeping sickness is doing a most useful work. The expedition consisted of Dr. J. E. Dutton, Dr. J. L. Todd, and Dr. C. Christy, the last named of whom was a member of the Royal Society's Commission sent to Uganda to investigate the cause of sleeping sickness. The expedition stayed at Boma until the end of the year. At Boma the Belgian authorities attached a State medical officer to the expedition, Dr. Heiberg, a former student of the Liverpool School of Tropical Medicine. After a stay of six weeks at Boma the expedition proceeded to Matadi, where it remained for a few days. Dr. Dutton and Dr. Christy then went through the cataract region, their tour lasting three weeks, when they joined Dr. Todd and Dr. Heiberg, who had preceded them, at Leopoldsville. A stay of four months was made there, the Government placing a spacious bungalow at the disposal of the expedition and subsequently building a hospital for the special study of cases of sleeping sickness. The members were thereby enabled to make careful observations of sleeping sickness under the most favourable conditions possible and to work without encountering the obstacles so frequently met with by expeditions in similar climes who have not had the opportunity of remaining for a sufficient length of time in a suitable district in such favourable circumstances. As the cases of the sickness were very numerous a great amount of material was available and the expedition was able to study closely the different types of the disease. The expedition speaks in the highest terms of the unfailing courtesy and ready assistance it has received everywhere from the Belgian officials of every grade. Dr. Christy left for Rome on May 1st, the other members, Dr. Todd and Dr. Dutton, proceeding up the Congo river, where the expedition will continue its researches in the little known regions of the interior. Dr. Christy brought to Southampton by the s.s. *Anversville* four natives suffering from sleeping sickness who were sent on in a special invalid coach to Liverpool, one of whom unfortunately died on the day following his arrival at Liverpool; the others are now in the Royal Infirmary. The *Anversville* also brought home a number of rabbits, monkeys, and rats sent out by the school which have been inoculated with the disease. These were sent on to Liverpool for investigation.

Mosquitoes and Malaria.

At the invitation of Major Ross, C.B., F.R.S., professor of tropical medicine at the University of Liverpool, a meeting of the Lancashire and Cheshire Entomological Society was held in the Johnston Laboratory of the University on May 23rd. A tour of the extensive laboratory with its attendant menagerie was made, after which Major Ross and the staff of the Liverpool School of Tropical Medicine gave demonstrations on mosquitoes and other flies in connexion with tropical diseases. Among the many interesting exhibits described were preparations of serum for protection against diseases, tubes of various bacteria, models of an Indian village and a larger district to show the natural distribution of the typical breeding grounds of malarial mosquitoes, a microscopic exhibition of malaria germs in various stages of growth, live trypanosomes of the sleeping sickness and tsetse-fly diseases, specimens of the tsetse-fly (glossina morsitans), &c.; also a series of microscopic preparations showing the characteristic differences in appearance and structure existing between the malarial and harmless gnats. An adjournment was afterwards made to the lecture theatre where Major Ross gave an instructive and interesting lecture on the connexion between malaria and mosquitoes, copiously illustrated by lantern slides.

The Linnean Society.

At the annual meeting of the Linnean Society held on May 24th Professor William A. Herdman, F.R.S., F.L.S., professor of natural history at the University of Liverpool, was elected president for the ensuing two years.

The New Professor of Physical Chemistry at the University of Liverpool.

Mr. F. J. Donnan, Ph.D., M.A., who was recently appointed to the chair of physical chemistry lately founded by Sir John Brunner, Bart., is a graduate of the Royal University of Ireland and was trained in the laboratories of Leipsic and Berlin. He was afterwards associated with Sir William Ramsay of University College, London, for about three years, first as his assistant in the department of chemistry and then as assistant professor. Dr. Donnan was subsequently elected to a junior fellowship at the Royal University of Ireland and is now lecturer at the Royal College of Science, Dublin. As an original investigator he takes a high place. The development of chemistry on the physical side has been so rapid and so important in its practical applications that Sir John Brunner was prompted to establish the chair at the University of Liverpool.

The Royal Infirmary: the John Lawrence Memorial.

At an influential and representative meeting held in the town hall on May 27th, the Lord Mayor presiding, it was resolved to provide a memorial of the many services rendered to the city by the late Alderman John Lawrence, the memorial to take the form of the endowment of a bed in the Royal Infirmary, with which charity he had been closely identified for 22 years. It is hoped to raise £1200, as the annual maintenance of the bed would cost about £54.

St. Helen's Sanatorium.

The new extensions to the St. Helen's corporation sanatorium at Peasley Cross were formally opened on May 26th by the Mayoress of St. Helen's. The enlargement consists of two pavilions, a discharging ward, a new mortuary, and 16 additional bedrooms, the total area now covered being upwards of five acres. The total amount expended by the corporation since the opening has been £23,600. The number of patients admitted last year was 516, but the hospital is capable of dealing in times of emergency with 130 patients. The whole of the extensions have been erected in accordance with the requirements of the Local Government Board and in the most up-to date manner. The institution is now completed with the exception of further laundry accommodation and the possible extension of the administrative block.

June 7th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Death of Lord Powerscourt.

Viscount Powerscourt who died at his London residence on June 5th had filled many positions of public honour and usefulness, and among others the post of chairman of the board of superintendence of the Dublin hospitals.

Rotunda Hospital, Dublin.

Mr. Francis T. Heuston, senior surgeon, Adelaide Hospital, has been appointed by the board of governors of the Rotunda Hospital as consulting surgeon in succession to the late Sir Philip Crampton Smyly.

Jervis-street Hospital, Dublin.

At a special meeting of the governors and guardians of Jervis-street Hospital held on May 31st Mr. Denis Kennedy, surgeon to the Children's Hospital, Temple-street, was elected unanimously to the position of visiting surgeon to the institution.

Dublin Sanitary Association.

The annual report of the Dublin Sanitary Association appeared on May 18th and deals with the insanitary condition of a number of the national schools both in Dublin and in several parts of the country. It calls attention to the fact that it is useless to expect that the very best domestic management in the houses of the working classes will safeguard health in the south of the city so long as the children are compelled to attend school in buildings in which the sanitary arrangements are of a distinctly primitive and objectionable character. The council suggests that part of the equivalent grant for education might with advantage be allocated to the improvement of the sanitary condition of the national schools throughout Ireland. The report goes on to call attention to the abnormal infant mortality as evidenced by the fact that during the 13 weeks ending January, 1904, out of a total of 108 deaths registered of persons the cause of whose death was uncertified 69 were children under five years of age.

Health of Belfast.

At the city of Belfast corporation meeting on June 1st it was reported that in the four weeks ended May 14th 51 cases of scarlet fever, 39 of typhoid fever, 31 of erysipelas, 20 of simple continued fever, 29 of diphtheria, five of typhus fever, four of small-pox, and three each of puerperal fever and membranous croup had been notified. The average annual death-rate was 21·6 and while a large number of cases of infectious disease was notified the deaths were but few. Small pox still continues and there are at present 12 cases in hospital, and 25 persons who were more or less in contact with the disease are under observation at the reception house at the Twin Islands. Four of these new cases were due to concealment. The public health committee urges revaccination and also that the public should, where suspicious cases of illness arise, communicate at once with the health department of the corporation.

The Belfast Workhouse.

Mr. Agnew, Local Government Board inspector, has recently reported on the condition of the Belfast workhouse for the past half year. He refers especially to the overcrowding of the wards which prevents the medical officers making a better classification of diseases in the infirmary.

Visit of the Lord Lieutenant of Ireland to Belfast.

During the recent stay of the Lord Lieutenant of Ireland in Belfast he visited on June 3rd the Royal Victoria Hospital, where the following members of the medical staff were presented to him: Mr. J. W. Browne, Sir W. Whitla, Professor J. W. Byers, Dr. H. L. McKisack, Dr. W. Calwell, Mr. A. Fullerton, and Dr. W. Rankin. His Excellency also visited the Mater Infirmorum Hospital, where Dr. A. Dempsey, Dr. P. O'Connell, Dr. J. B. Moore, Dr. J. W. Killen, Dr. W. J. Maguire, Mr. P. J. H. Mulholland, and Mr. W. McLorinan, members of the visiting medical staff, were presented to him. In both institutions he made a careful inspection and expressed himself as much pleased with all that he saw.

The Belfast Medical School.

There are 111 students attending hospital this summer as against 118 in the last summer session, while during the past winter (1903–04) there were 149 as against 139 in the previous session, so that practically the numbers are, taking summer and winter together, almost the same in both years. Mr. J. A. Lowry has been awarded the Coulter exhibition and Mr. R. Chambers (first) and Mr. W. A. Magill (second) the Malam exhibition.

June 7th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Carbon Dioxide Baths.

AT the meeting of the Academy of Medicine held on May 24th M. Laussedat discoursed upon the effects of the carbon dioxide bath—that is to say, a bath taken in water highly charged with the gas in question. Myriads of small bubbles are given off which excite the skin and produce a marked reaction which can be utilised with great advantage as a therapeutic method. The Nauheim baths owe their reputation to this disengagement of gas but the value of the said baths has been much questioned. In a general way they excite the nervous system and have a marked effect in raising the blood pressure. But although treatment by these baths has met with numerous successes in cases where the blood pressure was too low, such as neurasthenia, anæmia, and certain cases of cardiac valvular disease, yet, on the other hand, they have been found to be harmful in cases where they were prescribed without due consideration for patients in whom the arterial tension was high, for in such the gravest symptoms have arisen. M. Huchard and M. Albert Robin have many times inveighed against the disastrous tendency of sending all and sundry cases of cardiac disease to Nauheim, a practice which is responsible for many deaths every year, either at Nauheim itself or on the patient's return. M. Laussedat has shown that the gaseous bath does not raise the blood pressure unless it be given in a certain manner; that is to say, the gas must come off very quickly at a low temperature or at a fairly high one and the bath must only be given for a short time. If, on the other hand, the bath be given at a temperature of 34° C. and for a long time, with the water stationary and not running, there is no rise in the blood pressure but a lowering thereof, so that in this way the baths may be given to patients with arterial sclerosis or aortic disease who cannot be treated at Nauheim.

The Radiography of Foreign Bodies.

At the same meeting of the Academy M. Terrier, for M. Contremoulins, read a paper dealing with the location of foreign bodies in the organism by means of the x rays. M. Contremoulins stated that since the publication of his first radiographic method in March, 1897, he had examined 83 patients and in 77 of these foreign bodies were extracted. The foreign body was left in the remaining six cases but not on account of any reason connected with failure of the radioscopy. The new method is claimed to be of special use in military surgery, for the operations of localisation and of extraction being completely separate the one from the other localisation can be carried out at any point on the field of battle and extraction at any other point. Thus the two operations can be carried on without the two departments concerned having to arrange the work between themselves. The new method brings about a great saving of time, for five minutes suffice to localise the foreign body and ten minutes at the most to map out the exact field of operation.

Facilities for Factory Workers Suckling their Infants.

I have often referred in the pages of THE LANCET to the movement which is taking place in France for the encouragement of breast-feeding of infants and a corresponding disuse of artificial feeding. M. Budin, president of the Association for the Protection of Infant Life (Ligue contre la Mortalité Infantile), is naturally an active promoter of this movement. Up to the present time one of the principal obstacles to the breast-feeding of infants has been the fact that so many women are engaged in various industrial occupations. Some large employers of labour already give special facilities to such of their workwomen as happen to be nursing. They leave off work in rotation at certain hours and a room is provided where their infants are brought to them from the crèche for the requisite time. Bonuses are also granted to the mothers of the finest infants. The State, moreover, is disposed to follow this example in the factories connected with the various Ministries. M. Budin has obtained a definite promise that workwomen in the national factories will be permitted and encouraged to suckle their infants and arrangements are about to be made giving them all the necessary facilities.

Treatment of Epitheliomata by the X Rays.

At a meeting of the Société de l'Internat des Hôpitaux de-

Paris M. Leredde showed two patients, one male and one female, suffering from epithelioma of the face which he had treated by means of the x rays. The male patient had a tumour larger than a mandarin orange which was destroyed in five sittings, two having a duration of one hour and three of 45 minutes. It was possible that the cure might be complete; there was no projecting part and there was copious formation of epidermis on the margins. The woman had for years been under treatment without success, principally by the method of Czerny-Trunecek. The epithelioma occupied the entire root of the nose from one eye to the other and even encroached on the right conjunctiva. After six sittings of 20 minutes each the ulceration diminished by a half, the pain disappeared entirely, and a complete cure was expected at an early date. These cases were interesting on account of the difficulty which extirpation of the diseased parts would have presented, particularly in the second case, in which extensive removal of the bones of the face could not have been avoided. X ray treatment was applicable to extensive epitheliomata and was often preferable to extirpation.

Operative Procedures in Certain Forms of Infantile Paralysis.

At the same meeting of the Société de l'Internat des Hôpitaux de Paris M. Péraire showed two patients on whom he had operated for conditions due to infantile paralysis. The first patient was a young girl in the doubled-up position known as "cul-de-jatte," which was corrected by the following operations: (1) lengthening, freeing, and suture of the tendo Achillis; (2) resection of the knee; and (3) cuneiform tarsectomy with complete removal of the astragalus. The second patient was a boy suffering from club-foot (talipes equino-valgus and equino-varus) and was treated by (1) suture of the tibialis anticus to the extensor proprius pollicis; (2) suture of the tendons of the lateral peronei to the tendo Achillis; (3) suture of the extensor communis digitorum to the tibialis anticus and to the extensor proprius pollicis; and (4) removal of all the bones of the tarsus.

Obituary.

Dr. Gilles de la Tourette, professor in the Paris Faculty, head of the medical service of the exhibition held in 1900, died at Lausanne on May 24th, aged 47 years. His health had been failing for four years. A pupil of Charcot, he was for a long time at the Salpêtrière Hospital and published a number of admirable researches on hypnotism and neuropathology. He was an officer of the Legion of Honour.

June 7th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Sleeping Sickness in German West Africa.

Dr. K. Hintze, Government medical officer at Togo, German West Africa, has published in the *Deutsche Medicinische Wochenschrift* a report on sleeping sickness which has lately become somewhat prevalent in that colony. He has learned from the natives that the disease appeared in the country about 30 years ago but in course of time became extinct. In 1895 sporadic cases reappeared, the first death occurring as early as 1896. Since that time about two cases happened every year till 1902 when there was a sudden increase. Since 1896 there have been 48 deaths from sleeping sickness. At present the disease seems to be decreasing, as Dr. Hintze only found ten patients in the districts which he visited. He describes headache as being the principal symptom in the beginning of the disease; it may be present either for some months or for a longer period and may be the only indication of what is impending. At a later stage the face becomes somewhat swollen and the mental state of the patients shows remarkable alteration, they neglect their work, avoid the society of their friends, and suffer from drowsiness, they speak very slowly and softly, and may even lose the power of speech for several weeks. Some exhibit mental aberration and according to a native missionary maniacal excitement is of occasional occurrence. Tremulousness of the trunk and extremities comes on at a somewhat early stage and generally continues till death. The patellar reflexes are sometimes increased, sometimes normal, and sometimes absent. The pulse-rate is by no means constant; rates varying from 59 to 140 per minute have been recorded. The appetite is said to be good but emaciation nevertheless soon sets in and the skin becomes of a pale grey colour. Swelling of the glands at the angle of the jaw and a vesicular or pustular exanthema are also observed. In the final stage there are contractures of the arms and legs, the head is retroflexed, the patients are unable to move, are somnolent, and must be artificially fed. Death is attended by deep coma with incontinence of urine and fæces. Recovery has never been observed; the time from the beginning of the first symptoms till death varies from four months to three years. All ages and both sexes are liable to the disease but the most usual age of the patients is from puberty to the fiftieth year. In some places sleeping sickness is believed to be contagious, in others not; it is remarkable that the disease has an obvious tendency to occur in certain families. Dr. Hintze has not been able to form a distinct opinion on this question; he draws attention to the fact that as cooking vessels, clothes, pipes, and similar articles are constantly used by the natives in common there is ample opportunity for infection. Circumstances rendered systematic pathological or bacteriological work impossible but he made some blood preparations and collected some samples of cerebro-spinal fluid in none of which did he find either bacteria or trypanosoma; the only remarkable feature observed in the blood was a relatively great number of eosinophile cells. In one case where a partial post-mortem examination was made the naked-eye appearances of the brain and spinal cord were normal.

The "Dispensaire Antituberculeux."

The so-called "Dispensaire Antituberculeux," which takes a prominent place among the measures adopted for the prevention of tuberculosis in France, is becoming more and more popular in Germany also. It will be remembered that at the "dispensaire," which is an invention of M. Calmette of Lille, tuberculous patients are instructed in the details of personal hygiene most necessary for them to know; their dwellings are disinfected by officials of the "dispensaire"; and when circumstances make it desirable they are supplied with clothing, bed-linen, spittoons, and other requisites. Moreover, they are informed which sanatoriums and convalescent houses are available for them. It is a principle of the institution that medical examinations and medical prescriptions are strictly excluded, so that the work of the patient's medical adviser is not interfered with. On the contrary, medical men are requested to send their patients to the "dispensaire" for information. In Berlin the first "dispensaire" was opened a year ago in connexion with the Royal University Polyclinic for Tuberculosis; the second was opened by the "Free Choice Association," and in course of time sick clubs and other associations followed that example. The movement is a very reasonable one. Although a "dispensaire" is not in a position to publish impressive statistical results in the way that a sanatorium does it undoubtedly serves a useful purpose and can be carried on at a moderate expense.

Female Students at the University of Berlin.

During the present summer semester at the University of Berlin 368 women are on the books as compared with 562 during the preceding winter semester, and 293 during the summer semester of 1903. Of these 107 are foreigners, among whom 60 Russians form the majority. The numbers attending the various faculties and classes are as follows: philology, philosophy, history, and general science, 256; natural science, 33; medicine, 28; political economy, 22; theology, 15; dentistry, 11; mathematics, 3; and law, 2. 38 of the ladies are married.

Public Health in Prussia.

The annual public health report for the kingdom of Prussia dealing with the events of the year 1902 has lately been issued by the Government medical department. The report states that the death-rate in 1902 was lower than in any preceding year since 1875; the principal cause of this satisfactory condition was that owing to the cool weather of the summer months there was a reduction in the infant mortality. The number of births was less by 6178 than in 1901, and it is remarked that since 1876 the number of births has permanently decreased, and especially in Berlin. On the other hand, the death-rate of the capital was smaller than that of the other districts, being 15·90 per 1000, whilst the province of Silesia, where the mortality was highest of all, had a death-rate of 23·35 per 1000. The measures taken for the

prevention of infectious diseases have contributed to diminish the mortality. This fact was especially obvious in the case of enteric fever, as bacteriological examination enabled the medical officers of health to diagnose the disease in an early stage and to isolate patients promptly. The report directs attention to the work of the local sanitary authorities in the towns and rural districts with regard to disinfecting arrangements, water-supply, drainage, &c. The hygiene of dwellings was said to be showing decided, although slow, progress. Great improvements have been made in school hygiene. The hygiene of factories and the inspection of food were not found to be everywhere in a satisfactory condition.

June 6th.

Medical News.

THE LEAGUE OF MERCY.—On June 8th the Prince and Princess of Wales, Grand President and Lady Grand President of the League of Mercy, gave a garden party at Marlborough House to which a large number of the presidents, vice-presidents, and members of the League of Mercy were invited. At 3 P.M. a meeting of presidents and lady presidents of the league was held in the saloon when a report of the work of the league during the past year was read by Mr. J. Harrison, M.V.O., one of the honorary secretaries, and a list of the names of those to whom the order of the league had been awarded by the King was announced by the registrar, Colonel Knollys. The Prince of Wales cordially thanked the presidents and other workers of the league for the services they had rendered through it to the London hospitals and expressed his pleasure at having an opportunity of personally meeting those who had striven to make, and had succeeded in making, the organisation of the League of Mercy so successful. Their Royal Highnesses, at the conclusion of the proceedings, adjourned to the garden, where about 1000 guests had assembled. After making a tour of the grounds the Royal party presented the decorations of the order to those to whom the award had been sanctioned by the King. Lord Wolverton presented the recipients, some 39 ladies and gentlemen, to the Prince, who decorated them with the order and afterwards shook hands with them. Refreshments were served during the afternoon in a buffet in the grounds and the band of the Royal Marine Light Infantry played selections of music at intervals. The names of those who have this year been awarded the order of the league for distinguished personal service are as follows: H.R.H. Princess Alexander of Teck (lady president, Epsom—Esher), H.H. Princess Victoria of Schleswig-Holstein (lady president, Berkshire), the Countess of Dartmouth (lady president, Lewisham), the Lady Harris (lady president, Faversham), the Lady Florence Pelham-Clinton (representing H.R.H the Duchess of Albany, lady president, Deptford—Brockley), Mrs. Charles Wightman (lady president, Hampstead), Colonel Sir Edwin Hughes (president, Woolwich), Mr. Montagu Sharpe, D.L., J.P. (president, Brentford), Mrs. Bentall (lady vice-president, Maldon), Mrs. Pritchard Binnie (lady vice-president, South Paddington), Mrs. Bishop (lady vice-president, Woolwich), Mrs. Gerald Buxton (lady vice president, Epping), Mrs. Castle (lady vice-president, Kingston—Surbiton), Miss Cayley (lady vice-president, Fulham), Mrs. Chancellor (lady vice-president, Richmond), Mrs. N. Cox (lady vice-president, Fulham). Mrs. Dawson, lady vice-president, Woolwich), Mrs. Norfolk (lady vice-president, Deptford—Brockley), Miss Swindells (lady vice-president, Lambeth—Norwood), Mrs. Wilkinson (lady vice-president, North St. Pancras), Sir Theodore Martin, K.C.B., K.C.V.O (vice-president, Guildford), Mr. Wenman Blake (vice-president, Fulham), Captain T. W. Gunton (vice-president, North St. Pancras), Mr. R. G. Edwal Locke (vice-president, Faversham), Mr. Randall Mercer (vice-president, Medway), Dr. H. G. Thompson (vice-president, Croydon), Mr. Frank Turner (vice-president, West Marylebone), the Marchioness Cassar de Sain (member, St. George Hanover-square), Miss Katie Browne (member, Fulham), Miss Dennistoun (member, Westminster), Mrs. Walter Farquhar (member, Westminster), Miss C. M. Gibbs (member, North Hackney), Miss Mildred Hope (member, Westminster), Mrs. Macnab (member, South Paddington), Mrs. Payne (member, Colchester), Mrs. Skinner (member, Epping), Mrs. R. Thorne Waite (member, North St. Pancras), Mr. G. W. Boorman (member, Medway), and Mr. J. Smewing (member, North St. Pancras). According to the charter under which the League of Mercy was founded in 1899, its object it to further the interests and to promote the adequate maintenance of hospitals and other institutions for the relief of sickness and suffering, and this was to be done especially by encouraging personal service on the part of large numbers of persons. The League of Mercy has, in the four years during which it has been in operation, contributed £32,000 to the King Edward's Hospital Fund and this part of its work appears to be now established on a firm basis with progressively increasing results. Moreover, the additional £100,000 or £150,000 per annum which the King's Fund was initiated to secure for the hospitals seems to be now within measurable distance of being attained.

NEW ST. MARY'S HOSPITAL, MANCHESTER.—On May 30th the old St. Mary's Hospital in Quay-street, Manchester, was finally closed and the patients were removed to the new building in Whitworth-street, just across the street from the Oxford-road station. The hospital has done good work in Quay-street for more than 100 years but more space was required and the new hospital can accommodate 100 patients. The police ambulances were used for the removal of the patients, which was carried out without any difficulty. The new hospital is arranged with due regard to the views of modern science but its situation is not ideal. It is low, very subject to fog, extremely noisy from the enormous amount of traffic in the adjoining streets and from the railway station close by, and in dry weather the dust from the streets will be a great nuisance. The best that can be said for the situation is that it is in the midst of a poor population.

AMBIDEXTRAL CULTURE SOCIETY.—At the meeting of this society held on June 1st Miss Werner of King's College delivered a lecture on Ambidexterity among the Zulus and other African Tribes. She said that unfortunately she had very little direct evidence on the subject. In general, so far as her information went, the right hand was the one used by preference for actions which required one hand only or chiefly. There were, however, indications that the proportion of left-handed or ambidextrous persons was larger in Central Africa than in Europe, but sufficient facts were not at hand to say precisely what that proportion was. The linguistic evidence, drawn from the expressions used in various Bantu languages for the right and left hand respectively, went indirectly to show that a preference was on the whole given to the right hand, which was known as the "eating" or the "throwing," sometimes as the "great" or the "male," hand. The left was sometimes called the "female" hand, but in some languages it was denoted by a word of which it was not easy to discover the meaning and which might not denote inferiority. It was worth noting that, according the Rev. H. Barnes of the Universities' Mission to Central Africa, the Chinyanja words set down in his vocabulary for "right" and "left" hand respectively were really used for the more and less used hands whichever these might happen to be. This implied a certain prevalence of left-handedness but not of ambidexterity.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The annual meeting of the Fellows was held on June 4th, Sir Lambert H. Ormsby, the President, being in the chair. The report of the council was submitted and adopted. It was explained by the President that the receipts were with two exceptions the best for the past ten years. The College had recently expended over £1200 in painting and so on; this was paid off and at the date of the report the College was entirely free from debt and had a bank credit of nearly £1400. The investment account stood at £10,407 7*s.* 11*d.* and the trust fund £4917 2*s.* 3*d.*, making a total of £15,324 10*s.* 2*d.* During the year ten candidates having passed the examination were admitted Fellows, 55 received the Diplomas in Surgery and Midwifery, 24 the Conjoint Diploma in Public Health, 8 the Licence in Dental Surgery, and 43 passed the preliminary entrance examination. There are at present living 435 Fellows, 2834 Licentiates, 181 Diplomates in Public Health, and 515 Licentiates in Dental Surgery.—At a meeting of the Fellows held on June 6th the following were elected office-bearers:—President: Mr. Arthur Chance. Vice-President: Mr. Henry R. Swanzy. Secretary of the College: Sir Charles A. Cameron, C.B. Council: Dr. Edward Hallaran Bennett, Mr. William Stoker, Sir Charles Cameron, Mr. John B. Story, Sir

William Thomson, C.B., Sir Charles B. Ball, Sir Thomas Myles, Mr. John Lentaigne, Dr. Richard D. Purefoy, Sir Lambert H. Ormsby, Mr. Henry G. Sherlock, Dr. R. Bolton McCausland, Mr. John S. McArdle, Mr. Robert H. Woods, Dr. Thomas Donnelly, Mr. William Taylor, Dr. Edward H. Taylor, Mr. G. Jameson Johnston, and Mr. R. Charles Maunsell.

ISOLATION HOSPITAL FOR TEIGNMOUTH.—A Local Government Board inquiry was held at Teignmouth (Devon) on June 2nd into the application of the urban district council for sanction to borrow £7100. £2471 are required for the erection of an isolation hospital and the remaining sum for the purchase of a recreation ground and other improvements.

UNIVERSITY OF OXFORD.—Dr. Joseph Frank Payne has been re-elected a representative of the University upon the General Medical Council.—Sir Arthur V. Macan has been appointed an examiner in midwifery, Dr. William Williams has been appointed an examiner in preventive medicine, and Dr. Marcus Seymour Pembrey has been appointed to examine in physiology in the first B.M. examination *pro hac vice*.

ROYAL INSTITUTION.—At a general monthly meeting of the members of the Royal Institution held on June 6th the sincere thanks of the members were returned to Mr. Andrew Carnegie for his donation of £1200 to enable Professor Dewar and Mr. R. A. Hadfield to prosecute their joint investigation on the physical properties of steel and other alloys at low temperatures, and to Dr. Frank McClean for his donation of £100 to the research fund of the Royal Institution.

UNIVERSITY OF CAMBRIDGE.—The degree of Master of Surgery has been conferred on Professor Howard Marsh, M.A.—The following have been appointed examiners for the final M.B. examinations in the next academical year:—Medicine: Dr. L. Humphry, Dr. S. West, Dr. W. Hale White, and Dr. J. Rose Bradford. Midwifery: Dr. M. Handfield-Jones and Dr. G. E. Herman. Surgery: Mr. C. T. Dent, Mr. E. Owen, Mr. C. W. Mansell Moullin, and Sir Hector C. Cameron.—Dr. Ole Bull of Christiania has presented to the University two valuable portfolios of drawings illustrating the diseases of the eye and of the ear. Professor T. Clifford Allbutt has received permission to exhibit the drawings at Oxford during the approaching meeting of the British Medical Association.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill will shortly publish a new work by Dr. J. C. Thresh entitled "The Examination of Waters and Water Supplies." The author says in his preface: "The microscopical and biological examination of matters suspended in drinking water has never received in this country the attention it deserves. Very often such an examination reveals more quickly and certainly the character of a water and some defects in its source than either a chemical or bacteriological analysis. In several instances such an examination has led, in my practice, to the discovery of sources of pollution which had been overlooked at a careful inspection. I have endeavoured therefore in this book to give it the importance it deserves." The importance of the systematic inspection of all sources of water supply is now fully recognised by the Local Government Board, so much so that the Commission on Sewage Disposal has expressed the opinion that Rivers Boards should be formed throughout the country.

EDINBURGH ROYAL INFIRMARY: A QUARTER'S DEFICIT.—The quarterly statement of the ordinary income and expenditure of the Edinburgh Royal Infirmary shows a deficit of £5295. The statement is drawn up by Mr. Patrick Blair, W.S., the convener of the house committee, who is a master of finance. During the quarter the daily average number of people under the roof of the infirmary was 1157, of whom 831 were patients. Compared with the corresponding quarter of the previous year the average daily number of patients was 69 more. There had been a marked diminution in the sums received from various sources. Taking all the sources together, both of ordinary and extraordinary revenue, the infirmary had received £7226, while for the corresponding period last year £8905 had been received. The expenditure for the period under review was £12,521. The increase in the cost of maintenance was only £264, although the increase in the daily average number of patients had increased as above stated. It is probable that the deficit is not quite so bad as it looks, for the works department expenses give an item of £2485 for the quarter which might be included under extraordinary expenditure. The convener evidently preferred to place it under ordinary expenditure and on the basis of the large deficit to point out to the board and to the public that £1000 a week is the rough sum required to run this important institution.

DEATH OF A CENTENARIAN.—There has just died at Flax Bourton workhouse, near Bristol, an inmate named Robert Lock who had reached his 104th year.

WATER-SUPPLY OF LYNTON AND LYNMOUTH.—Sir George Newnes formally opened the new water-supply for Lynton and Lynmouth on May 28th. The water is brought from West Lyn, about one and a half miles from Lynton. The polarite system of filtration is used. The cost of the undertaking has been about £2500.

DONATIONS AND BEQUESTS.—Under the will of Miss Esther Steel the Western Ophthalmic Hospital, Marylebone-road, London, W., has been bequeathed the sum of £1000.—Mrs. E. A. Williams has by her will bequeathed £500 to the Cancer Hospital, Fulham-road, S.W.; £200 each to the London Hospital and the Poplar Hospital for Accidents; and £100 to the Victoria Cottage Hospital at Romford.

INCORPORATED MEDICAL PRACTITIONERS' ASSOCIATION.—The thirteenth annual general meeting of this association was held at the Holborn Restaurant on June 2nd, the retiring President, Mr. G. H. Broadbent (Manchester), being in the chair. On the proposition of Mr. Joseph Smith, seconded by Mr. George Brown, Mr. Robert Ambrose, B.A., M.P., was unanimously elected President for the ensuing 12 months. Mr. F. Greaves and Mr. G. Brown were re-elected honorary treasurer and hononary secretary respectively. At the conclusion of the meeting the members and their friends, to the number of about 40, dined together, the newly elected president, Mr. Ambrose, being in the chair. In responding to the toast, "Prosperity to the Association and to the *General Practitioner*" (the official journal of the association), proposed by Mr. Broadbent, Mr. Ambrose said that since the society was established in 1891 it had been a great success and had done much to uphold the status of the profession. The main object of the association was to safeguard the interests of the medical profession, especially those of the general practitioner, and this he claimed they had done more efficiently than any other society. One of their aims was to protect general practitioners from unfounded charges and the association had been so prosperous during the past year that he hoped they would shortly be able to establish a scheme of medical defence for the members at a cost much below the subscription charged by any other existing society. Their association, moreover, provided a bond of mutual goodwill and fraternity between the members to promote which was an important part of their good work. The influence of the association had been shown by the fact that chiefly through their efforts, as he claimed, two of their members, general practitioners, had been elected as Direct Representatives for England and Wales on the General Medical Council in place of two consultants who occupied the seats when the association was first established. He thanked those present for their hearty reception of the toast and he trusted that his year of office would, as regarded the association, be one of increased prosperity and usefulness.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Medical Inspection of Schools.

THE Secretary for Scotland has received a memorial from the Royal College of Physicians of Edinburgh on the subject of the Scotch Education Bill and its bearing on the health of school children. While approving of the provisions dealing with medical inspection and physical training the memorialists point out that medical inspection of schools to be effective implies the power of the medical inspector to examine into the health of children and their capacity for mental and physical education as well as into the school hygiene in a broad sense. In many of the city schools it is contended that physical education is urgently needed and that it should be placed on a

scientific basis. Another point urged is that school boards should have the power to insure suitable feeding for the poorer classes of school children who cannot otherwise obtain proper nourishment. It will be recollected that Mr. Claude Hay brought this latter matter before the House of Commons with much force some time ago.

HOUSE OF COMMONS.

WEDNESDAY, JUNE 1ST.

Shop Hours Bill.

The Bill introduced by the Government to deal with the question of shop hours was read a second time after a debate of considerable interest. At the outset Sir CHARLES DILKE moved this amendment: "That in the opinion of this House the proposed measure for the early closing of shops is unduly hampered by restrictions and not providing for the regulation of the hours of shop assistants fails to satisfy the terms of the unanimous resolution of this House." In Mr. ASQUITH'S opinion the Bill was a very mild and homœopathic measure of reform and he much regretted that the Government had not so framed its title and scope as to make it possible to introduce amendments to meet the cases of common occurrence where shop assistants were compulsorily employed either before the opening or after the closing of the shops. He did not think that any measure would be really effective which did not couple with the power of compulsorily closing the shop itself some provision by which shops assistants would not be employed, unless for a short interval, after the hour of closing. A freer hand should also be given to the local authorities and a simplification of the procedure would be desirable. While thus critical on points of detail he, however, supported the second reading.—It was also supported by Dr. FARQUHARSON on the ground that the voluntary system of early closing had broken down, that the Bill would not inflict any hardship on the working classes, and that it was a great and urgent necessity in the interest of the health of the shop employés.—Sir WALTER FOSTER, on the other hand, contended that the measure was inadequate to meet what he called the great social evil of the hours of shop assistants.—In the Government reply on the debate Mr. COCHRANE pointed out that the whole question had been fully argued in reports of committees and commissions. It was found from the evidence given in 1901 that the hours ranged from 80 to 90 a week besides the time occupied after closing in putting away goods, and medical evidence was strong that such long hours in ill-ventilated buildings must be injurious and often ruinous to health. High medical authorities were in favour of this legislation. The Bill would, he submitted, interfere as little as possible with the liberty of shopkeepers and would be accepted by the assistants as a boon.—At the close of the debate Sir Charles Dilke's amendment was defeated by 130 votes to 42, and the Bill was then read a second time and sent to the Grand Committee on Trade.

THURSDAY, JUNE 2ND.

Care of Pauper Children.

On the vote for the expenses of the Local Government Board a discussion arose in regard to the care of pauper children. Mr. LONG stated that the number of these children in the workhouses had been steadily decreasing and the number outside steadily increasing. The debate had dealt with various ways of providing for the children outside the workhouses. In that matter the Local Government Board had remained neutral because it would be impossible for any department to force on a board of guardians the adoption of a particular scheme against its own judgment. He agreed that the appointment of one or more medical lady inspectors for pauper children might be desirable. As to the Hanwell case, the numbers of children in these schools varied from day to day and the managers were confronted with the alternatives of temporarily finding accommodation for a larger number than the place was certified for or of leaving some children in the workhouses. Provided there was no serious overcrowding Mr. Long considered that the former alternative was infinitely preferable. With regard to the abandonment of the practice of insisting on a probationary period for the children the department disapproved of the change of policy, but the managers had strong views on the subject and in this experiment they had behind them the opinion of their medical officer. In no single case could it be shown in his belief that the department had sanctioned an extension of the large barrack school system except such an extension as was necessary for the improvement of the existing accommodation.

Hospitals for Consumptives.

In the course of the same debate Mr. LONG made a passing reference to hospitals for consumptives. He stated that he believed the hospital at Skipton and the hospital provided by the joint unions of Liverpool had done very good work. The department would be glad to do anything it could to help the guardians in work of this character.

Adulteration of Milk.

Mr. KEARLEY dealt with the adulteration of milk when the Local Government Board vote was before the House. He asserted that the percentage of the adulteration of milk at the present time was 11·6. The percentage for the 25 towns which came next in order of size to London was 10·3, but in London the percentage was 15·6, while in six of the leading metropolitan boroughs it was 28. Some time ago a departmental committee had recommended that the use of preservatives or colouring matter in milk should be made an offence under the Sale of Food and Drugs Act and he complained that no steps have been taken to carry out that or any of the other recommendations of the committee.—Mr. GRANT LAWSON replied on behalf of the department. He said that the chief inspector of the Board continually visited the local authorities and pressed upon them this question of adulteration. In 1902 8411 samples of milk were taken in London of which 1314 were found to be adulterated. In 1903 9488 samples were taken of which 1275 were adulterated. These were not really out of proportion to the rest of the country. As for the report of the Committee on Preservatives legislation would be required but he did not give any promise that it would be introduced.

The Supply of Lymph.

Mr. WEIR urged Mr. Long to agree to an arrangement whereby the Local Government Board would undertake to supply lymph for the whole country.—Mr. LONG declined. He said it would be difficult for any Government department to undertake such a task and, moreover, he saw no necessity for it, because there was no reason whatever to doubt that the present supply of commercial lymph was of admirable quality.

MONDAY, JUNE 6TH.

Committee on Poor-law Medical Relief.

Mr. TENNANT asked the Secretary for Scotland, with reference to the recommendation contained in the report of the Departmental Committee on Poor-law Medical Relief, whether the Local Government Board had considered the advisability of holding an inquiry into the system of boarding out pauper children in Scotland, and, if so, whether it would appoint a committee. He further asked whether the Secretary for Scotland intended to introduce a Bill to empower the Local Government Board to prohibit pauper nursing in Scottish poorhouses, as had been recommended by the Departmental Committee on Poor-law Medical Relief.—Mr. GRAHAM MURRAY replied: The Local Government Board is at present considering the report of the Departmental Committee on Poor-law Medical Relief with a view (1) to have effect given to such of the recommendations as appear advisable and do not require legislation; and (2) to propose legislation in so far as that may be necessary.

The Efficacy of Antityphoid Inoculation.

Mr. EUGENE WASON asked the Secretary of State for War whether the committee appointed by the Royal College of Physicians of London to investigate and to report upon the efficacy of antityphoid inoculation had completed its inquiries and made its report.—Mr. ARNOLD-FORSTER replied: The committee appointed by the College to consider and to report on the safety and prophylactic value of Dr. A. E. Wright's antityphoid inoculation has made its report. The whole question of antityphoid inoculation is being considered by a body of experts.

Nurses in Military Stations.

Sir JOHN COLOMB asked the Secretary of State for War whether any communications had been issued from the War Office containing proposals to provide military stations with a nurse trained in maternity and general nursing to attend the wives and families of soldiers without expense to them; and, if so, to whom were such communications made and what was their general purport.—Mr. ARNOLD-FORSTER replied: Letters were sent to all general officers commanding asking for an expression of opinion as to the best means of providing nursing for the wives and families of soldiers in places where hospitals were not provided. The replies have not yet been received from all the officers concerned.

TUESDAY, JUNE 7TH.

Hospital Accommodation in Ross and Cromarty.

Mr. WEIR asked the Secretary for Scotland whether, in view of the statement contained in the last report of the medical officer of health of Ross and Cromarty relative to the need of hospital accommodation for the county, he would state what decision the Local Government Board had arrived at on the subject.—Mr. GRAHAM MURRAY replied: The question of hospital accommodation for the districts of the county of Ross has received, and is still receiving, the careful consideration of the Local Government Board. I shall be happy to give the honourable Member more detailed information privately.—The information which the Secretary for Scotland supplied to Mr. Weir privately was as follows: The scheme for the western district referred to by the county medical officer in his last report has now been approved by the Board. The south-western district committee proposes to submit sites for two local hospitals for the Board's approval and on April 28th the Board was informed that the site chosen on the Lochalsh side of the district recommended itself to the chief medical officer of health. On May 9th the Board learned that the plans of the combination hospital for the Black Isle district and the burgh of Fortrose were being examined by the different medical officers of health in the district before applying for the Board's statutory approval. With regard to Mid-Ross and Eastern Ross districts the Board has at present under consideration the question of the adequacy of the Ross Memorial Hospital at Dingwall for the needs of the districts. In the Lewis district the only hospital is at Stornoway. The proposal to erect four parish hospitals has not yet been submitted to the Board, possibly on account of the requisite funds not being available, as pointed out by the county medical officer in his report.

BOOKS, ETC., RECEIVED.

AMERICAN CLIMATOLOGICAL ASSOCIATION (Secretary, Dr. Guy Hinsdale, Hot Springs, Va.).

Transactions of the American Climatological Association for the Year 1903. Volume XIX. (Copies may be had of the Secretary.) Price not stated.

AMERICAN PEDIATRIC SOCIETY (Editor, Dr. W. L. Carr, 68, West Fifty-first-street, New York).

Transactions of the American Pediatric Society, fifteenth session, held at Washington, D.C., May 12, 13, and 14, 1903. Edited by Walter Lester Carr, M.D. (Reprinted from Archives of Pediatrics, 1903.) Price not stated.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent-garden, W.C.

Cleft Palate and Hare-lip: the Barlier Operation on the Palate. By Edmund Owen, M.B., F.R.C.S., Surgeon-in-Chief to the French Hospital. (Medical Monograph Series, No. 10.) Price 2s. 6d. net.

FISCHER, GUSTAV, Jena.

Handbuch der Anatomie und Mechanik der Gelenke unter Berücksichtigung der bewegenden Muskeln. Von Rudolf Fick, a.o. Professor u.I. Prosektor der Anatomie, Leipzig. Erster Teil: Anatomie der Gelenke. Price M.16; gebunden, M.18.

Zur Lehre von den Blutgefässen der Normalen und Kranken Gebarmutter. Von Dr. med. Richard Freund, Privatdozent an der Universität Halle a./S. Price M.18.

Physiologie des Menschen. Von Dr. Luigi Luciani, Professor der Physiologie und Direktor des physiologischen Instituts der k. Universität von Rom. Ins Deutsche übertragen und bearbeitet von Dr. Silvestro Baglioni und Dr. Hans Winterstein. Mit einer Einführung von Dr. Max Verworn. Erste Lieferung. Price M.4.

Die männlichen Geschlechtsorgane. Von Prof. Dr. C. J. Eberth, in Halle a.S. Price M.10.

Für die Türkei. Selbstgelebtes und Gewolltes von Dr. Robert Rieder Pascha, a.o. Professor der Chirurgie an der Universität Bonn z.Z., Generalinspektor der Kaiserl. ottom. Medicinschulen und Direktor des Krankenhauses Gülhane in Konstantinopel. Bd. II. Price M.14.

ISBISTER AND CO., 15 and 16, Tavistock-street, Covent-garden, W.C.

National Physical Training. An Open Debate. Edited by J. B. Atkins. Price 2s. 6d.

MARSHALL, PERCIVAL, AND CO., 26-29, Poppins-court, Fleet-street, E.C.

Radium and other Radio-Active Elements. A popular Account treated experimentally by Leonard A. Levy (First in First-class Honours in Physics at London Int.B.Sc., Neill Arnott Exhibitioner and Medalist) and Herbert G. Willis. Price 2s. 6d. net.

MURRAY, JOHN, 50a, Albemarle-street, W.

The Treatment of Some Acute Visceral Inflammations and Other Papers. By David B. Lees, M.A., M.D. Cantab., F.R.C.P. Lond., formerly scholar of Trinity College, Cambridge, Senior Physician to the Hospital for Sick Children, Great Ormond-street; Physician to St. Mary's Hospital. Price 6s. net.

REBMAN, LIMITED, 129, Shaftesbury-avenue, Cambridge-circus, W.C.

An Atlas of Human Anatomy for Students and Physicians. By Carl Toldt, M.D., Professor of Anatomy in the University of Vienna, assisted by Professor Alois Dalla Rosa, M.D. Translated from the Third German Edition and adapted to English and American and International Terminology, by M. Eden Paul, M.D. Brux., M.R.C.S., L.R.C.P. Fourth Section. E. Splanchnology. Price 9s. 6d. net.

SCIENTIFIC PRESS, LIMITED, 28 and 29, Southampton-street, Strand, W.C.

Medical Tuberculosis, its Rational and Natural Cure, its Several Stages, and Relationship to Cancer. By R. B. Searle, L.R.C.P., M.R.C.S., L.S.A., Mayor of Dartmouth. Price 1s. net.

SWAN SONNENSCHEIN AND CO., LIMITED, Paternoster-square, E.C.

The Oxford and Cambridge Yearbook. Part II., Cambridge. Edited by A. W. Hollan t, sometime scholar of St. John's College, Oxford. Price 2s. 6d. net.

"THE ELECTRICIAN" PRINTING AND PUBLISHING COMPANY, Limited, Salisbury-court, Fleet-street, E.C.

Radio-Activity: an Elementary Treatise from the Standpoint of the Disintegration Theory. By Frederick Soddy, M.A., Lecturer on Physical Chemistry and Radio-Activity in the University of Glasgow. Copyright. Price 6s. 6d. net.

UNIVERSITY PRESS OF LIVERPOOL.

The University of Liverpool Calendar 1903-1904. Price not stated.

VIGOT FRÈRES, 23, Place de l'Ecole-de-Médecine, Paris.

Notions de Traitement Manuel, Leçons de Massothérapie et de Kinesithérapie faites dans le Service de M. le Professeur Gilbert à l'Hôpital Broussais (1903). Par le Dr. de Frumerie de la Faculté de Medecine de Paris. Price fr. 2.

Cours de Massage Accessoire des Soins d'Accouchements à donner aux Femmes Enceintes et Parturientes aux Nourrices et Nourrissons. Par le Dr. de Frumerie de la Faculté de Médecine de Paris. Price fr. 2.

Les Rayons X et l'Extraction des Projectiles, Expériences et Observations Cliniques sur l'Emploi d'un Nouvel Appareil. Par Ch. Remy, Professeur agrégé à la Faculté de Médecine de Paris, et P. Peugniez, Professeur de Clinique Chirurgicale à l'Ecole de Médecine d'Amiens. Price fr. 3,50.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ADENEY, G. C., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician to St. Thomas's Hospital.

BENNETT, H. S., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

BIRKS, G. T., M.B., B.C. Cantab., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

BIRT, A. C., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

CARVER, N. C., B.C. Cantab., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

CRICHTON, HARRY, M.D., B.S. Durh., has been appointed Assistant Surgeon to the Infirmary, South Shields.

DAVIES, H. E., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Act for the Lutterworth District of the county of Leicester.

EVANS, R. D., M.R.C.P. Edin., L.S.A., J.P., has been appointed Medical Officer to the Blaenau Festiniog Postal District.

GUTHRIE, T., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon to St. Thomas's Hospital.

FELDMAN, W. M., M.R.C.S., L.R.C.P., has been appointed Surgeon to ss. *Merion* (American Line).

HARNETT, W. L., M.B., B.C. Cantab., has been appointed Resident House Surgeon to St. Thomas's Hospital.

HAWARD, W., M.B., B.S. Durh., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to Out-patients at St. Thomas's Hospital.

HEDLEY, J. P., M.B., B.C. Cantab., has been appointment Junior Obstetric House Physician at St. Thomas's Hospital.

HIGHAM, B., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to Out-patients at St. Thomas's Hospital.

HUNTER, JAMES H., M.D., B.S., B.Hy. Durh., has been appointed Assistant Surgeon to the Infirmary, South Shields.

IBBOTSON, W., M.R.C.S., L.R.C.P. Lond., has been appointed House Officer to the Throat and Ear Departments at St. Thomas's Hospital.

LATHAM, C. H., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician to St. Thomas's Hospital.

LECKY, H. C., M.B., B.Ch. Oxon., has been appointed Resident House Physician to St. Thomas's Hospital.

LINDSEY, ERIC C., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the General Hospital, Hereford.

MACDONALD, JOHN, M.B., C.M. Edin., has been appointed Assistant Surgeon to the Infirmary, South Shields.

PINCHES, H. I., M.B., B.C. Cantab., has been appointed Resident House Surgeon to St. Thomas's Hospital.

RICKETT, G. R., B.C. Cantab., has been appointed House Officer to the Throat and Skin Departments at St. Thomas's Hospital.

ROSS, E. A., M.B., B.C. Cantab., has been appointed Resident House Physician to St. Thomas's Hospital.

SEARS, C. N., M.B., B.S. Lond., has been appointed Senior Obstetric House Physician at St. Thomas's Hospital.

SMYTH, J., M.B., C.M. Glasg., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

THORNE, J. M., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

WIGRAM, L. E., M.B., B.C. Cantab., has been appointed Resident House Surgeon to St. Thomas's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARMY MEDICAL SERVICE, War Office.—Examination for not less than 30 Commissions in the Royal Army Medical Corps.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—House Surgeon. Salary £75 per annum, with board and lodging.

BIRMINGHAM GENERAL HOSPITAL.—Honorary Physician.

BIRMINGHAM, UNIVERSITY OF.—Second Demonstratorship in Anatomy. Stipend £150 per annum.

BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer. Salary £104 per annum, with apartments, board, &c.

CANCER HOSPITAL, Fulham-road, S.W.—Assistant Anæsthetist. Honorarium 25 guineas per annum.

CARMARTHENSHIRE INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, attendance, &c.

DARENTH, DARTFORD, KENT.—METROPOLITAN ASYLUMS BOARD ASYLUM.—Two Male Assistant Medical Officers, unmarried. Salary at rate of £150 per annum, rising to £170, with rations, lodging, attendance, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—House Surgeon. Salary £50 per annum, with board and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Eight Clinical Assistants in the out-patient department.

GARLANDS, CARLISLE, CUMBERLAND AND WESTMORLAND ASYLUM.—Junior Assistant Medical Officer. Salary £130 a year, rising to £150, with board, lodging, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Second and Third House Surgeons and Junior House Physician for six months. Salaries at rate of £30 per annum, with board, lodging, and washing.

HARTSHILL, STOKE-UPON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL.—Assistant House Surgeon for six months Honorarium of £25, with board, lodging, and washing.

HEMEL HEMPSTEAD, WEST HERTS INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, attendance, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £40, with board and residence. Also Ophthalmic Surgeon.

ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas.—Resident House Surgeon, unmarried. Salary £52 per annum, with board and washing.

KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £90 a year, with board and lodging.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £70 per annum, with residence and board. Also Second Honorary Anæsthetist.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

LIVERPOOL INFIRMARY FOR CHILDREN.—House Surgeon. Salary £100 per annum, with board and lodging.
LIVERPOOL ROYAL SOUTHERN HOSPITAL.—Ambulance Surgeon.
LONDON LOCK HOSPITAL, Harrow-road, and 91, Dean-street, Soho.—Registrar.
MANCHESTER, VICTORIA UNIVERSITY.—Professor of Pathology and Pathological Anatomy.
ST. GILES, CAMBERWELL, INFIRMARY AND WORKHOUSE.—Junior Assistant Medical Officer. Salary £80 per annum, with apartments, board and washing.
ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer on Chemistry. Salary £150 per annum and fees.
SEAMEN'S HOSPITAL SOCIETY BRANCH HOSPITAL, Royal Victoria and Albert Docks, E.—House Surgeon. Salary £80 per annum, with board, residence, and washing.
SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months, renewable. Salary at rate of £70 per annum, with residence, board, and washing.
STAMFORD, RUTLAND, AND GENERAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.
TIVERTON UNION WORKHOUSE.—Medical Officer and Public Vaccinator. Salary £75 a year, and fees.
WANDSWORTH UNION INFIRMARY, St. John's-hill, near Clapham Junction.—Junior Assistant Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.
WESTERN GENERAL DISPENSARY, Marylebone-road.—Honorary Ophthalmic Surgeon.
WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, London, W.—Honorary Assistant Physician.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Physician for six months. Honorarium at rate of £75 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeon under the Factory Act at Romsey, in the county of Southampton; at Whalley, in the county of Lancaster; at Stevenage, in the county of Hertford; at Brighton, in the county of Sussex; and at Stonehaven, in the county of Kincardine.

Births, Marriages, and Deaths.

BIRTHS.

COCKING.—On Wednesday, June 1st, at 305, Glossop-road, Sheffield, the wife of W. Tusting Cocking, M.D. Lond., of a daughter.
CORNER.—On June 2nd, the wife of Edred M. Corner, of a daughter.
DEVITT.—On April 21st, 1904, at her residence, Ravenswood, North Queensland, the wife of Richard E. Devitt, M.B., B.Ch. R.U.I., J.P., surgeon District Hospital, &c., of a daughter.
HOSFORD.—On June 6th, at St. John's-road, Upper Holloway, N., the wife of B. Hosford, M.A., M.D., of a son.
MACKINTOSH.—On Friday, May 27th, at Corner House, Platt's-lane, Hampstead, N.W., the wife of J. S. Mackintosh, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.
SPILSBURY.—On June 2nd, at Hogsthorpe, Lincolnshire, the wife of Francis James Spilsbury, L.R.C.P., &c., of a daughter.
WIGGLESWORTH.—On June 3rd, at Kirkham, Lancashire, the wife of Sidney Wigglesworth, L.R.C.P., M.R.C.S., of a daughter.

MARRIAGES.

COLQUHOUN—FAIRLEY.—At Durban, Natal, on June 7th, 1904, James S. Colquhoun, L.R.C.P. & S. Edin., to Margaret, third daughter of James Fairley, mining engineer, Shafto House, near Chester-le-Street.
COURT—AUSTEN.—On June 1st, at St. Mary Abbott's, Kensington, by the Rev. H. Van Cooten, Percival Hyde Court, of Warsop, Notts, third son of Dr. Court, of Staveley, Derbyshire, to Mary Augusta, eldest daughter of the late George Durrant Austen, Esq., of Bognor.
HALL—DAWSON.—On June 7th, at the Centenary Congregational Church, Lancaster, Mr. J. William Hall, L.D.S.R.C.S., to Miss Constance Dawson, youngest daughter of Mr. Edward B. Dawson.
KNIGHT—VERDON.—At Christ Church, Streatham-hill, S.W., on June 1st, by the Rev. C. Nicoll, George David Knight, M.D. Aberd., of Brixton, London, to Dorothy Lesceline, only daughter of H. W. Verdon, M.D., of Streatham, S.W.
KRUMBHOLZ—CHAPMAN.—On Saturday, June 4th, at Holy Trinity Church, Wallington, Surrey, by the Rev. H. Hodgson, rector of Beddington, Charles James Izzard Krumbholz, M.B. Lond., M.R.C.S., L.R.C.P., of Rugby, eldest son of E. C. Krumbholz, Esq., of Alcester House, Wallington, to Alice Louise, second daughter of the late Thomas Chapman, Esq., of Croydon.
SHAW—ROBSON.—On June 1st, at St. Cuthbert's Church, Darlington, Raymond Henry Shaw, M.S., M.B., to Katharine, daughter of James Hutchinson Robson.
VISGER—REAY.—At St. Pancras Church, on June 2nd, Charles Visger, M.R.C.S., of Clevedon, Somerset, to Nesta Gwynne, only daughter of the late Hurst Reay and niece of the late John Alexander Ewens

DEATH

ANDERSON.—On March 12th, 1904, at his residence, Hamilton House, Church Walk, Ulverston, John Anderson, M.D., aged 71 years; born at Hamilton, Lanarkshire, N.B.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MINERS' PHTHISIS.

IN THE LANCET of May 21st, p. 1444, we referred to the exceptional prevalence of miners' phthisis among the men engaged in rock drilling. A leading article in the *Mining Journal* of May 28th discusses the same subject and calls for the issue of further regulations for the protection of the men employed in this particular work. In support of this contention the editor quotes a variety of statistics from the report of the Transvaal Commission which appeared last August and also from a paper very recently read before the Institution of Mining and Metallurgy by Dr. John S. Haldane and Mr. R. Arthur Thomas, manager of Dolcoath mine in Cornwall. Our contemporary concludes as follows:—

> The facts recorded by Dr. Haldane and his coadjutors show that the rock-drill miner's calling is at present in Cornwall and South Africa hazardous out of all proportion to other mining employment, while it is equally certain that this added risk of occupation disease may be almost entirely eliminated by the use of water and that in quantities so slight as probably to cause but little danger of fostering ankylostomiasis, while in any case the use of salt should avoid this danger. It seems therefore imperative that in the case of South Africa, even more than in this country, the Government should take steps to formulate rules forthwith to protect the rock driller against his now declared enemy. Experience everywhere shows that it is futile to trust in any way to the sense of the men themselves, even where there is no pressure put upon them to hasten their work.

RICHARD COBDEN AND THOMAS WAKLEY.

To the Editors of THE LANCET.

SIRS,—In political circles the name of Richard Cobden has been in the ascendant for some time past and just now the minds of certain Englishmen are much set on celebrating the centenary of his birth. The moment appears opportune to recall a fact of some medical interest which is brought out in a letter written by Cobden in 1864—viz., that when hard work told upon him, to recuperate his health he was wont to act upon (in part at any rate) a wholesome hint which he had gained from his Parliamentary colleague and friend, Thomas Wakley. Writing to Mr. Henry Ashworth under date July 6th, 1864, Cobden says:—

> "It would have given me great enjoyment to have visited you at your Highland box, but I go quietly among my children at Dunford during the fine weather, for I always feel under the liability of being induced to leave home for a southern clime in the winter. During the Session I see little of my young people, and I really think it is as healthful as it is pleasant to relax after the turmoil of the House and the clubs among the minds of children. I remember hearing Wakley say in the House when O'Connell first showed symptoms of giving way that if he would withdraw from politics and live with his grandchildren he might last for 10 years. But he died in a twelvemonth."—Morley's "Life of Richard Cobden," vol. ii., p. 454 (London: Chapman and Hall, 1881).

In less than nine months after writing the letter from which the above is extracted Richard Cobden died. Thomas Wakley had predeceased him by three years, while Daniel O'Connell had "gone over to the majority" long previously—in 1847. Pre-eminent in their several spheres they stood shoulder-to-shoulder for the common weal, unselfishly jeopardising health and strength, and probably length of days, for to O'Connell only was it given to live out the "allotted span." Wakley took no holidays until his health was permanently ruined, although he did consent to cease from Parliamentary duties a few years before the end.

I am, Sirs, yours faithfully,
June 1st, 1904. W. R.

CONSULTANTS AND LIFE ASSURANCE.

To the Editors of THE LANCET.

SIRS,—A. and B. were in partnership. The partnership has been dissolved. A. becomes a consultant in medicine and surgery. B. continues in general practice. Is A. as a consultant prevented from conducting examinations for life assurance?—I am, Sirs, yours faithfully,
June 8th, 1904. C. D.

*** No.—ED. L.

NEW VIEWS ON CELLULAR PHYSIOLOGY.

A CORRESPONDENT has forwarded to us a circular which he received from a lady who has recently started an establishment for giving light baths to ladies only. The advertiser states that she has procured a bath which is "an exact copy of the one supplied to H.M. King Edward VII. at Buckingham Palace and Windsor Castle" and her knowledge of the effects of electricity upon the body may be gathered from the following delightful paragraph. "For obesity I give the *combined light treatment* (using Arc Lights as well as Incandescent) from two to four times a week for about 20

minutes. The rays of the *Arc Light* bring about the necessary transformation of superfluous fat into muscular substance by reason of the increased oxidation." Again we read: "Owing to the penetrating power of light rays much more is accomplished; the deeper tissues of the skin are excited to activity, the heat-making process, by which fat may be consumed, are (*sic*) stimulated to an unusual degree as shown by the increased elimination of carbon-dioxide." We have said enough to show that the advertiser is grossly ignorant of what she is talking about and we think that it is quite time that the uncontrolled use of such powerful forms of energy as electrically generated light and heat should be taken into consideration by the Government, so that legislation might be formulated to put a stop to what we cannot but stigmatise as dangerous quackery.

FEMALE NURSES AND MALE PATIENTS.

To the Editors of THE LANCET.

SIRS,—I should be glad of an expression of your opinion on the following facts. We have in this district (as in most other poor parts of London) nurses belonging to the Queen Victoria Jubilee Nursing Association placed here by that association under the direction of a local committee who pay all expenses. It is usual for the local medical men to requisition the services of these nurses for operations and in accordance with this custom I notified them on Sunday, June 5th, that I should require two nurses to attend for an operation at a patient's house at 1 P.M. on Monday. One nurse attended at said house early on Monday morning to prepare the patient and then discovered that the operation was for phimosis in a man about 23 years of age. At the time fixed for the operation the same nurse accompanied by her senior appeared, and before entering the room the latter requested to see me. I complied with her request, and to my astonishment I was asked by her in a most impertinent manner: "What operation is this you are about to perform?" I told her. She then in the same tone continued, "I am most surprised that you should ask us to attend for an operation of this nature in *a man*; you have no right to ask us to do such a thing, and it is no part of our duty to do so." I merely told them to leave the house and I would manage without them, which considering that I had to administer an anæsthetic and to operate unassisted was no easy task. What makes the situation still more absurd is the fact that a few weeks before these very same nurses were with me at an operation for fistula in ano in a man of 45 years, and dressed the case daily afterwards. They are middle-aged women engaged daily in the ordinary routine of their work in administering enemata and all other nurses' duties to males of all ages and are both certificated midwives. They have to-day told a member of the local committee that in no hospital in London would a nurse be allowed to be present at an operation on the sexual organs of a male. Will you kindly express your opinion on the matter, since in an experience of a quarter of a century I have never heard that a hospital trained nurse was not allowed or expected to be present or assist at operations of this nature or undertake the daily dressing of such cases.

I am, Sirs, yours faithfully,

Silvertown, E., June 6th, 1904. JAMES MACDONAGH.

*** A hospital nurse attends such cases as she is instructed to attend, regardless of such points as are alluded to in our correspondent's letter.—ED. L.

A CASE FOR DIAGNOSIS.

To the Editors of THE LANCET.

SIRS,—I send you a copy of the contents of a letter received from a country patient yesterday. I had to make a diagnosis and formulate treatment upon the facts therein contained. Perhaps it may serve to exercise the ingenuity of those younger practitioners who pride themselves upon making correct diagnosis by intuition. The letter is as follows:—

May 8th, 1904.

MR. ——,—Come from my bellie till in my head and I cant speak and my ears are swell. (Signature) ——.

Perhaps, Sirs, you will be good enough to favour me with your view of the case. I diagnosed quinsy.

I am, Sirs, yours faithfully,

Knysna, Cape Colony, May 9th, 1904. WALTER H. HAW.

TETANUS AFTER THE APPLICATION OF A SPIDER'S WEB.

SOME days ago in Dgitomir, Russia, a boy cut his leg with a piece of glass and in order to stop the bleeding a spider's web was applied, taken from a corner in a shed. About ten days afterwards when the lad appeared to be all right he was suddenly taken with spasms. On being seen by a medical man tetanus was diagnosed. His condition was declared hopeless and in the course of a few hours he died.

THE DECAY OF ILLUSTRATING.

To the Editors of THE LANCET.

SIRS,—Many of the diagrams to be found in our modern medical books and periodicals leave much to be desired. If they are compared with those of earlier treatises it will be readily conceded that want of care and precision are prominent features of latter-day diagrammatic representation. A bad photograph is sometimes excusable, but it is difficult to tolerate faulty pen-and-ink work. So often do we see now a quill-sketched diagram with shading in the wrong place, furrows for ridges or *vice versâ*, and other unacceptable anomalies. There are few more perfect diagrams than those in Wilson's Anatomy published about 35 years ago, but this only represents a type of illustration common at that time. There can be no method more graphic than drawing in simple outline and it is a matter for regret that this style is not more frequently had recourse to by amateurs who often aim too high. No criticism is inferred in respect of professional artistic work, which usually effects all that can be desired.

I am, Sirs, yours faithfully,

May 30th, 1904. H. P. P.

PHOTOGRAPHS OF RIFLE SHOTS.

Messrs. Thomas Christy and Co. of 4, 10, and 12, Old Swan-lane, Upper Thames-street, E.C., have sent us a reproduction from a photograph of a rifle shot travelling at the rate of 30,000 feet per second, which is a very remarkable illustration of the high pitch of efficiency to which instantaneous photography has reached. The reproduction shows clearly the manner in which the bullet rends the air asunder into waves in its exceedingly rapid progress. The air waves vary in shape according to the shape of the bullet. The photograph was taken on a Dr. Schleussner's "special rapid observatory plate" and the exposure was one-millionth part of a second by means of the electric spark. Specially rapid plates are also made for rapid orthochromatic work, without a screen, for observatory work, stellar photography, and micro-photography.

J. H. J.—There is no certain deterrent of mosquitoes and the like pests applicable for daily and general use. An ointment containing turpentine has been used with success, as also the essential oil of pennyroyal—not mentha pulegium but hedeoma pulegioides.

W. R.—We cannot give an answer to our correspondent solely on the facts before us. Appointments are not necessarily transferable with a practice and C. may justifiably have sought to gain the appointments for himself.

H. E. H.—Our attention has already been drawn to the handbill in question and we expressed our opinion in THE LANCET of June 4th that the name of the practitioner should not have been inserted.

J. A. G.—The conditions mentioned would support a diagnosis of drunkenness.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M., St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.).

WEDNESDAY (15th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (16th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (18th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (14th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Dr. A. Newsholme: Protracted and Recrudescent Infection in Diphtheria and Scarlet Fever.

MEDICO-LEGAL SOCIETY (20, Hanover-square, W.).—8.15 P.M. Papers:—Mr. R. H. Wellington: "Suicide whilst Temporarily Insane" a Fallacy.—Dr. W. McCallin: A Note on Legal Procedure in Lunacy.—Earl Russell: The Limitations of Medical Evidence.

WEDNESDAY (15th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Paper:—Prof. J. D Everett: A Direct Proof of Abbe's Theorems on the Microscopic Resolution of Gratings.—Mr. F. W. Millett: Report on the Recent Foraminifera of the Malay Archipelago (Part XVI.).—Lecture: Mr. F. Enock: Nature's Protection of Insect Life (with lantern demonstrations).

ROYAL METEOROLOGICAL SOCIETY (70, Victoria-street, Westminster, S.W.).—4.30 P.M. Papers:—Rev. C. F. Box: Effects of a Lightning Stroke at Earl's Fee, Bowers Gifford, Essex, April 13th, 1904.—Mr. A. L. Rotch: An Instrument for Determining the True Direction and Velocity of the Wind at Sea.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. M. H. Macleod: Clinique. (Skin.) 5.15 P.M. Dr. C. T. Williams: The Relation of Fibrosis to Tubercle.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Saunders: The Summer Diarrhœa of Children and its Treatment.

TUESDAY (14th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Dr. J. R. Bradford: Bright's Disease and its Varieties. (Croonian Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. O. Hawthorne: Clinique. (Medical.) 5.15 P.M. Dr. F. J. McCann: Diseases and Injuries of the Female Bladder and Urethra.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Moullin: Pelvic Suppuration.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. R. Russell: Diagnosis of Tumours of Spinal Cord.

ST. PETER'S HOSPITAL (Henrietta-street, Covent Garden).—3.30 P.M. Mr. P. J. Freyer: Surgical Diseases of the Kidneys.

WEDNESDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. D. Armour: Clinique. (Surgical.) 5.15 P.M. Dr. F. J. McCann: Diseases and Injuries of the Female Bladder and Urethra.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Practical Medicine.

UNIVERSITY COLLEGE (University of London) (Physiological Theatre).—5 P.M. Dr. W. P. May: Advanced Lectures on the Tracts of the Brain—Lecture VII.: Cortex. Localisation. Association.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Maguire: Aortic Dilatation, its Causes and Treatment.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Dr. G. N. Meachen: Various Types of Eczema and their Treatment.

THURSDAY (16th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Dr. J. R. Bradford: Bright's Disease and its Varieties. (Croonian Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Dr. J. M. H. Macleod: Some General Principles of Local Treatment in Dermatology.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery.

CHARING CROSS HOSPITAL.—4 P.M. Dr. Murray: Demonstration of Medical Cases. (Post-Graduate Course.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Dr. F. Price: Aortic Stenosis (illustrated by cases). (Post-Graduate Course.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. Lane: Resting Deformities in Children.

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Mr. Malcolm: The Removal of Ovarian Tumours.

FRIDAY (17th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Clinique. (Ear.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Lloyd: The Administration of Anæsthetics.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. R. Russell: Syringomyelia.

SATURDAY (18th).—ST. PETER'S HOSPITAL (Henrietta-street, Covent Garden).—2.30 P.M. Mr. J. W. Thomson-Walker: Diagnosis in Urinary Disease.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 9th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 3	30·21	N.E.	...	112	65	50	50	53	Fine
" 4	30·28	N.E.	...	117	69	46	51	54	Fine
" 5	30·29	N.E.	...	121	71	49	50	56	Fine
" 6	30·16	N.E.	...	122	73	49	52	56	Fine
" 7	30·15	E.	...	115	67	50	50	55	Cloudy
" 8	30·03	N.E.	...	107	63	49	49	52	Cloudy
" 9	29·83	E.	...	96	59	49	48	54	Cloudy

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